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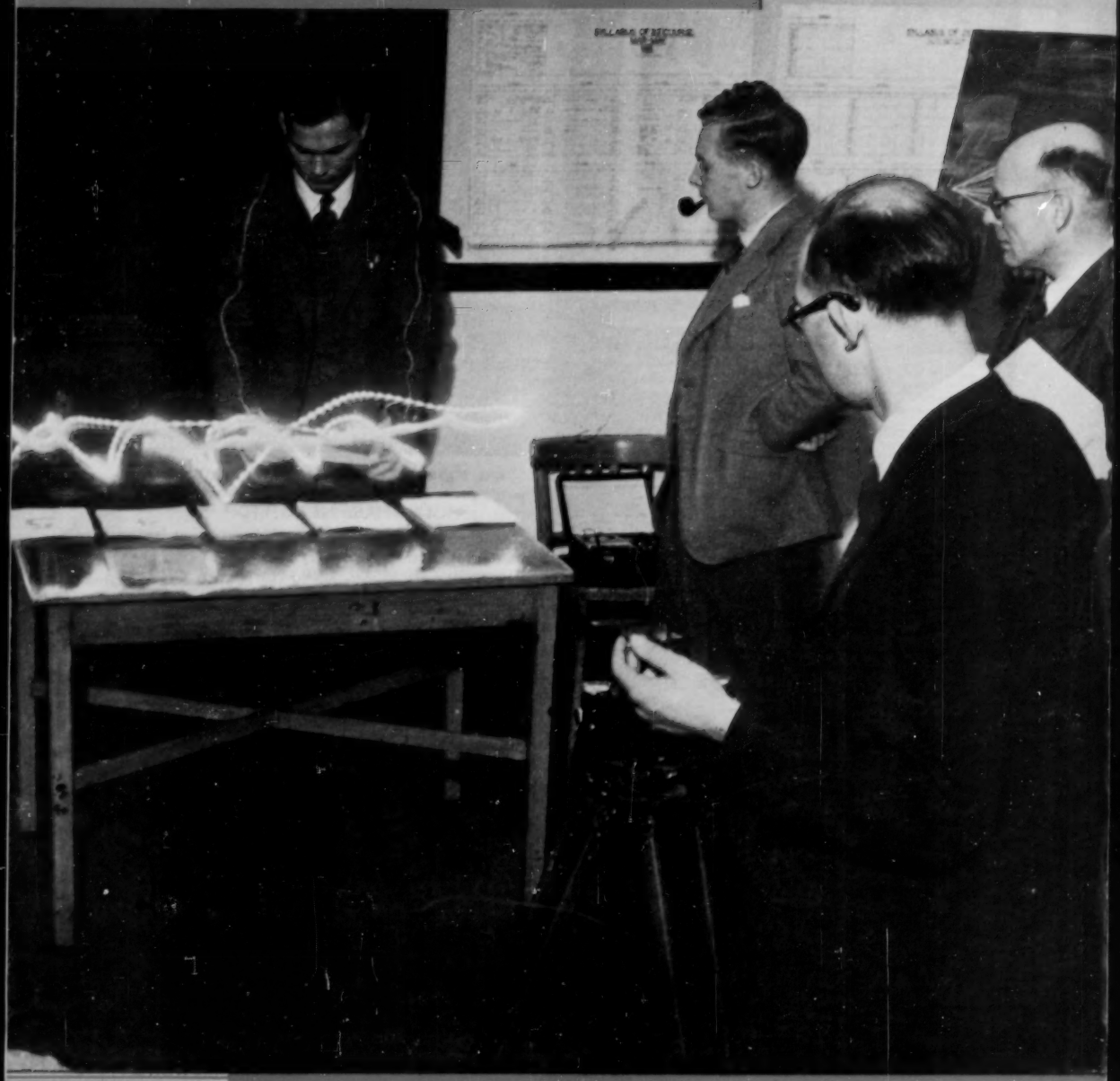

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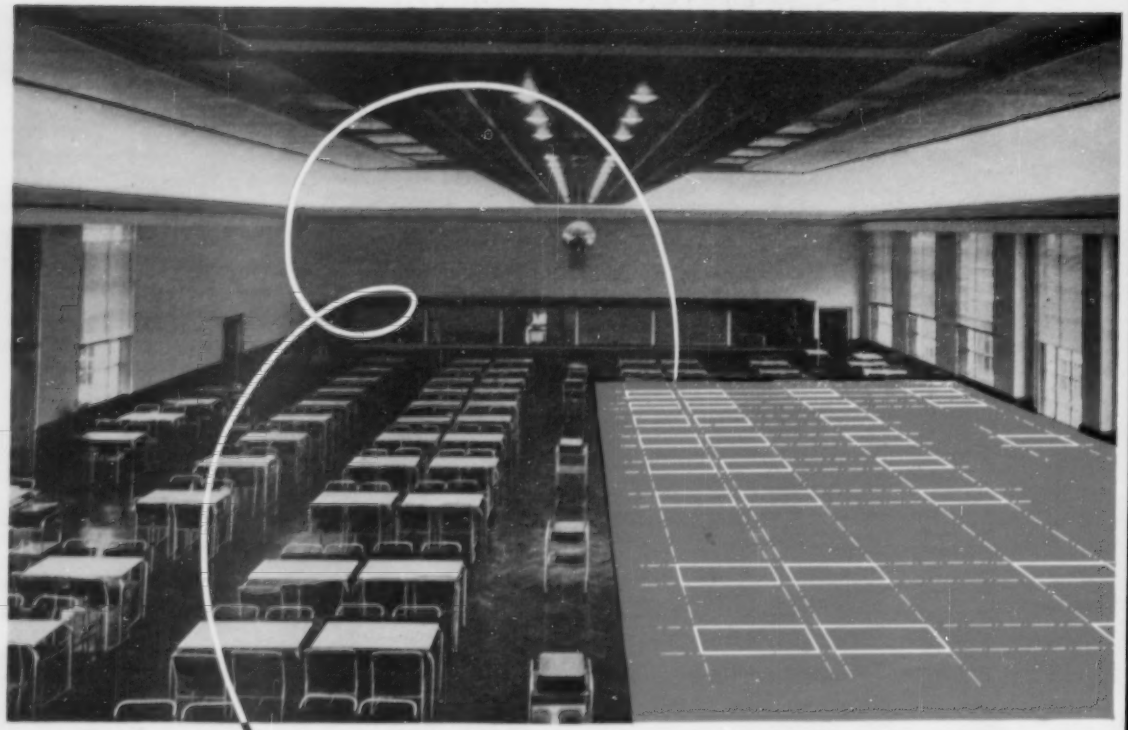

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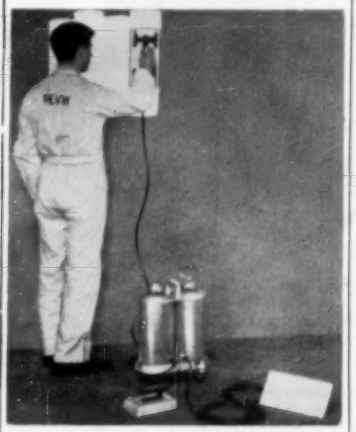

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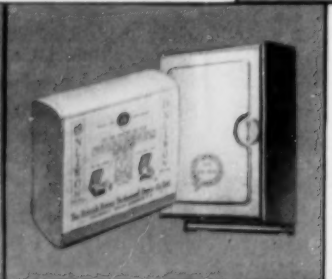

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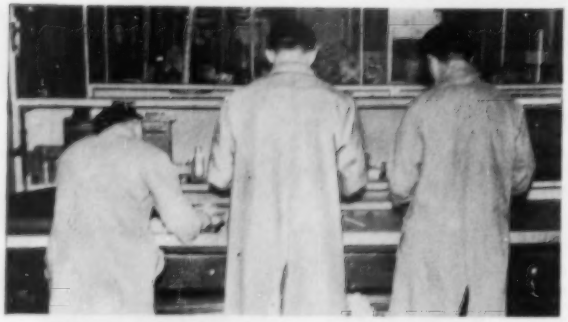

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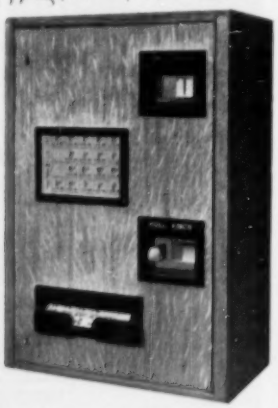

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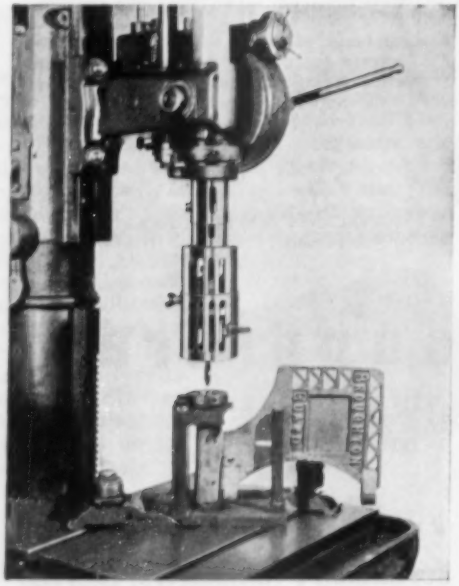

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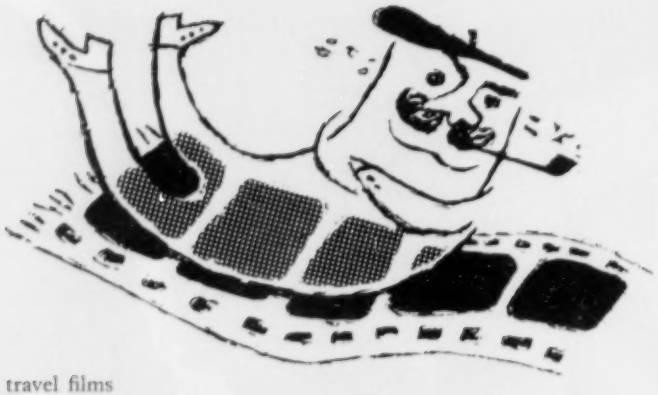

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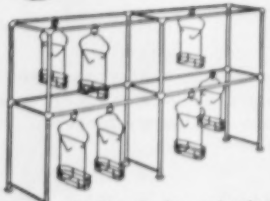

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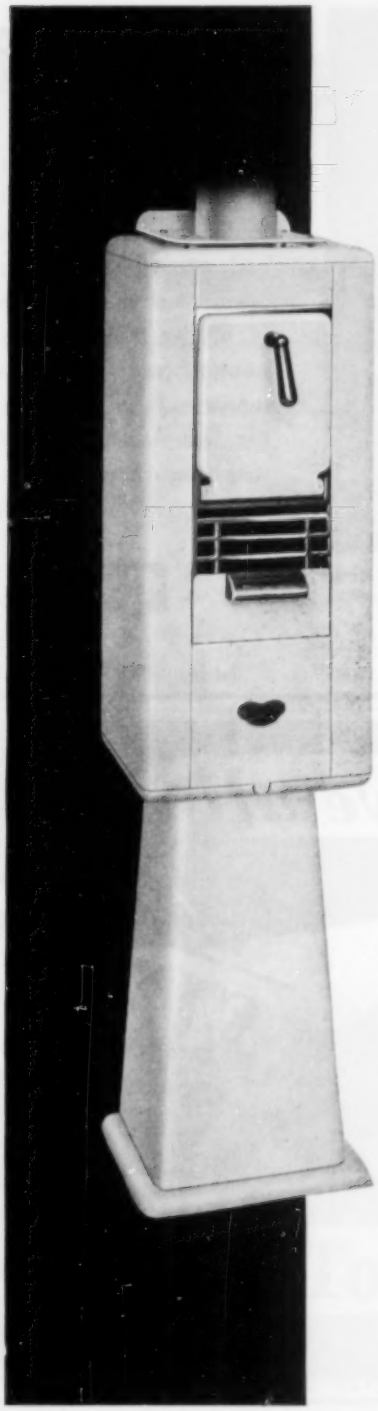

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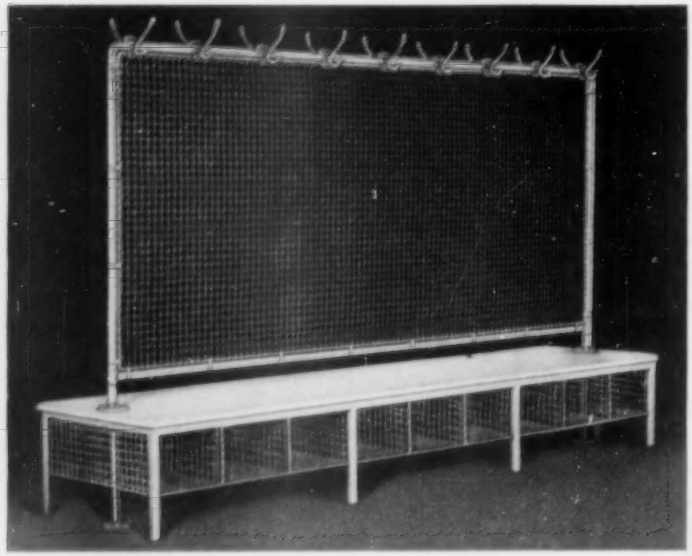

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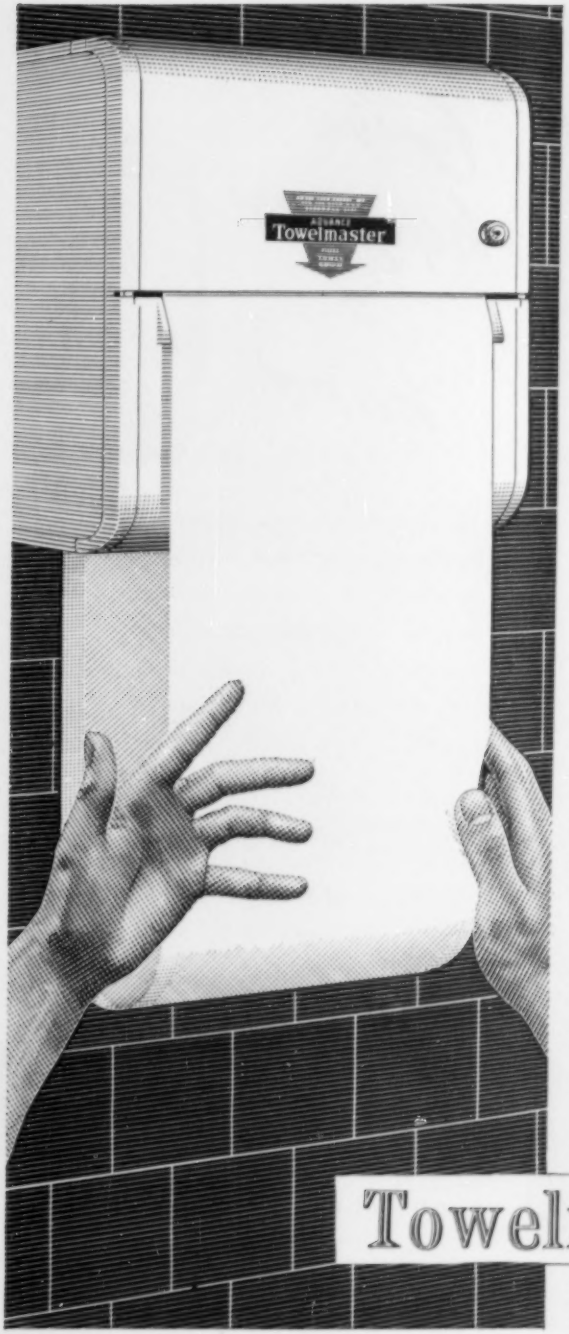

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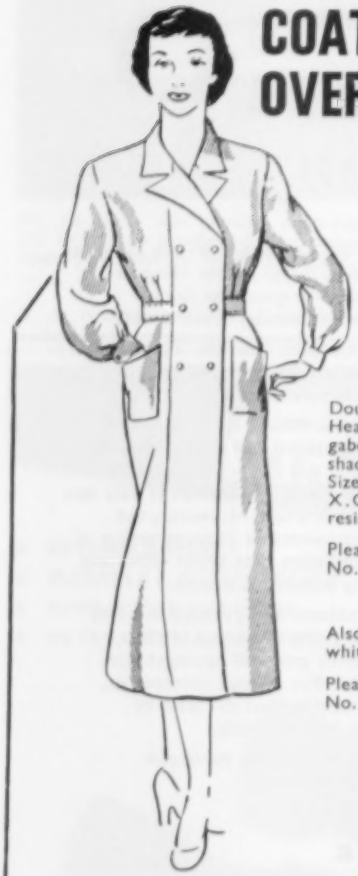

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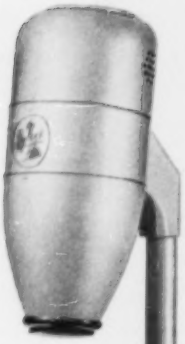

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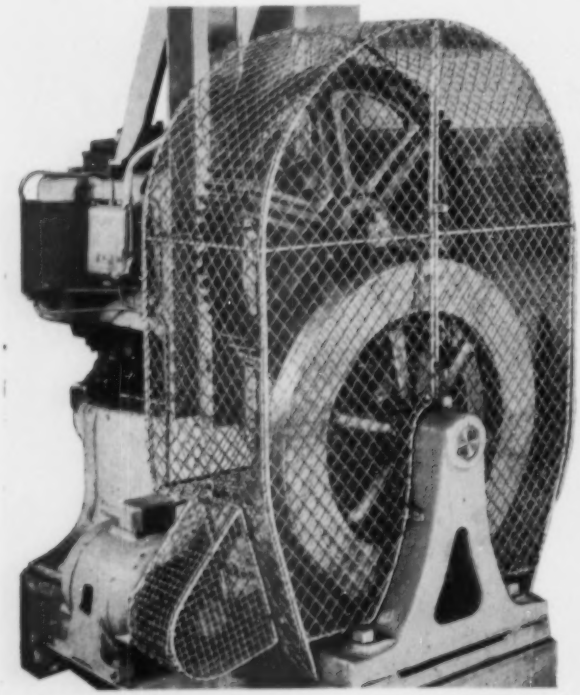

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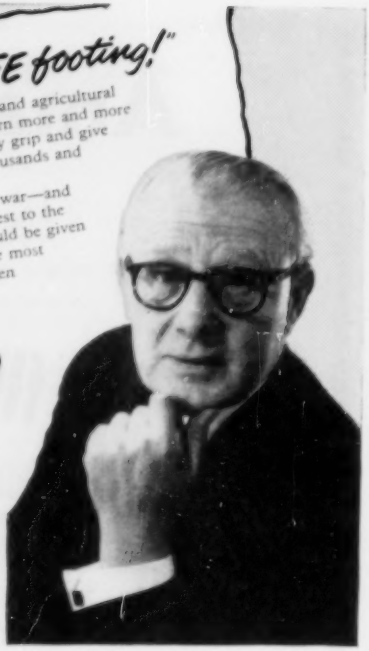

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Photo: Courtesy of Michael Brashier, Esq., Dip. Arch., A.R.I.B.A.

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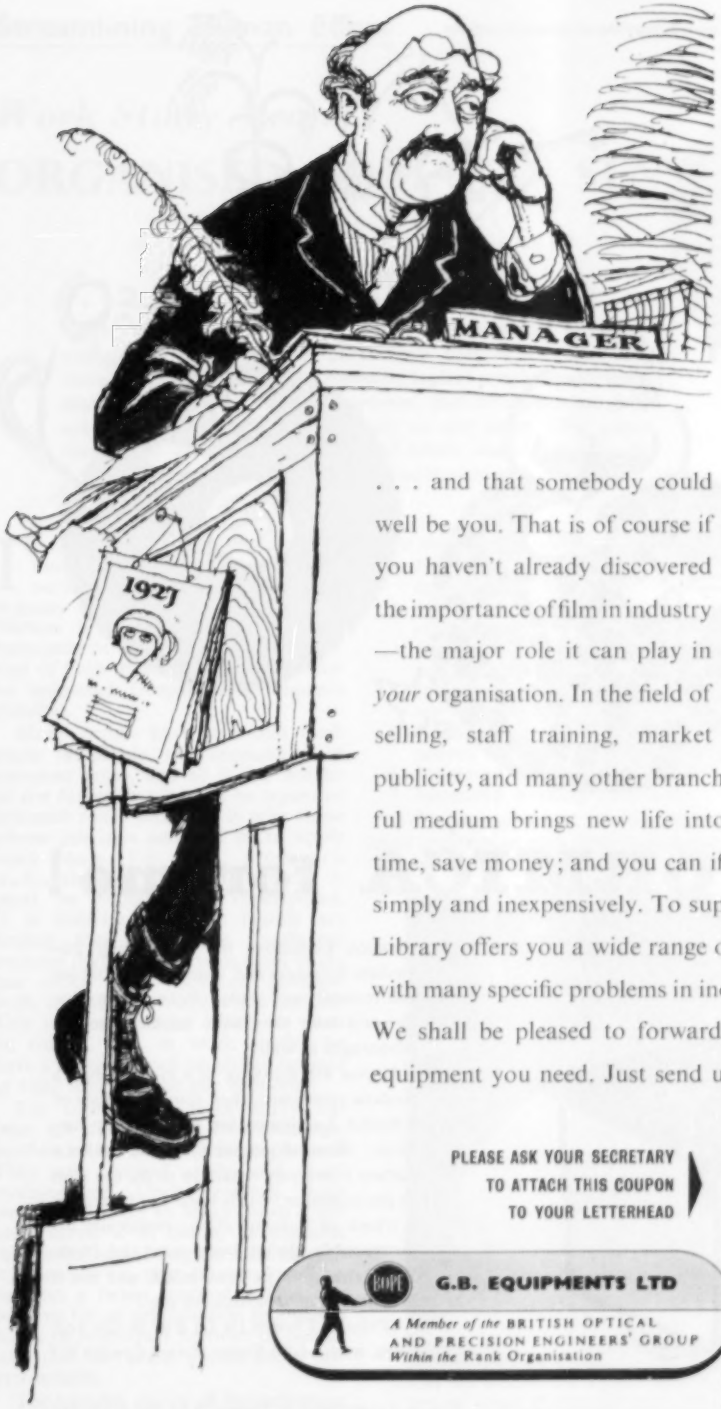

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Work Study Means ORGANISED COMMON SENSE

By D. R. WOODLEY, M.Eng., B.Sc., F.R.S.A.,
Principal, College of Production Technology

Work study, says the writer, is an immediate source of energy whereby we can double our productivity over increases of past years and automation is the ultimate, logical conclusion of work study. He makes the point, moreover, that its application does not involve spending a lot of money on new plant. The pages that follow give details of how and where work study can be applied and of results actually achieved.

IT cannot be too often repeated that work study is not a magic wand that can be waved over industry and all its problems solved. Neither is it a substitute for good management. It is the correct application of both that will bring us as near an industrial Utopia as is humanly possible.

Many people have said that work study is simply the application of common sense, and so it is ; but let us not forget that it must be *organised* common sense and that is why those whose job it is and will be to apply work study, job study, production study, whatever we may like to call it, must be trained and experienced. It is because so many people are finding their way with insufficient training that in some cases work study has fallen into disrepute amongst both management and trade unions. This is a real danger which we must be rid of, for, in work study, we have a powerful tool which can be used to right and balance our economy.

For convenience work study has been set down under two headings, neither of which can be separated. They are *method study* and *work measurement*. Under *method study* we have the way to break down a job and record it in detail, to examine that detail and, being dissatisfied with it, question it step by step and so develop a better method. This can be done for an organisation as a whole down to individual motions of operators and so bring about great improvements.

The broader claims of the technique show that *method study* can lead to:—

1. Improved layout of plant and equipment.
2. Improved use of plant and equipment.
3. Improved and more economical use of manpower.
4. Improved and more economical use of materials.
5. Reduction in handling and improved handling of materials.
6. Improved flow of production.
7. Improved working conditions.

Work measurement on the other hand provides us with three techniques for measuring work (i) by time study. (ii) by synthetic data, (iii) by analytical estimating. By way of these techniques we can determine the proper time to be allowed for the effective performance of a specified task. The time study element of work study will precede the application of method study for it is essential that the present times for the work be recorded before the job is improved.

Work measurement assists in bringing about:—

1. Improved planning and control.
2. More effective manning of plant and equipment.
3. Reliable indices for labour performance.
4. Determining labour cost control.
5. Determining standard costing.
6. A basis for the introduction of sound incentive schemes.

There are, however, wider claims for work study because there is scarcely a job in the whole world to which it cannot be applied. It is not solely a tool for mass production work, but is equally applicable to jobbing work and the one off. It can be applied to building work and also very effectively in offices, stores, warehouses and banks where great savings have already been made.

Much has been written and spoken of late about automation which

Cut out models are a great help in applying work study principles to improved layout of plant and equipment. (*Courtesy, British Productivity Council.*)

is a long term project, and we shall not feel the full benefit of it for another twenty years at least; what the world needs in general, and this country in particular, is an *immediate* source of energy whereby we can double our productivity over the increases of the past years, and this is only possible through work study. Automation is the ultimate logical conclusion of work study.

The outcome of a work study survey will not necessarily result in the installation of additional equipment which could be costly and only obtainable on a long delivery basis. It may not mean the use of additional labour of which today there is a great shortage. It may simply mean the relocation of certain departments; the relayout of existing plant; a different approach to the job; improved lighting, heating and ventilation; the changing around of personnel to more suitable work; manufacture of a more standardised range of products; the use of better materials, tools, etc. Or it may simply mean a lower or higher stool. The foregoing and a host of other equally important factors have done much to increase production with little or no capital expenditure involved.

A great number of case studies are available today and a quick glance through them leads us to believe that, provided trained people make the surveys, then work study can be a boon to the nation at the present time and in the years that lie ahead. We see that it is helping to reduce the £800,000,000 being spent annually on lifting and shifting materials, to say nothing of personal loss—by accidents caused by bad methods of production alone.

When time study was first introduced into this country in about 1927 it met with strong opposition from the workers who considered it constituted a threat to their earnings and even their jobs. The more stable conditions of the late 1930's did enable some progress to be made, but later came the wartime period of a cost plus 10 per cent basis which, although not actually preventing further application of work study, did not provide a solid background for further scientific analysis. The immediate post-war years presented the situation in which the manufacturer could sell all he could make, often regardless of price. To-day the conditions of manufacture and trading coupled with full employment are very much more competitive.

The film is perhaps the best means of all of putting across the idea of work study to workpeople. Here in this British Productivity Council film "Better Ways No. 3—All Over The Shop" is shown how a work study programme is launched by first recording every aspect of the department's work.

At the present time, then, we have more reason than ever before for proceeding with the application of work study. We must foster the workers' confidence in the idea and show them how it can improve efficiency and working conditions, reduce fatigue and, of course, improve their wage packets.

The Summing-up

To sum up: work study is the analytical investigation of methods, conditions, movement and effectiveness of industrial work. As a result of work measurement we are able to make comparisons of the relative monetary values of different production methods, layouts, handling techniques and so forth. Let us not forget, however, that to obtain the best results it requires the experience of a trained officer for its application.

A knowledge of work study, then, is part of the essential equipment of every executive concerned with industrial activity. One might, in fact, go further and say that it is part of the essential equipment of all with responsibility for the direction of human and mechanical performance in any sphere. The techniques are logical, they provide a key to successful control. As such they should be appreciated and applied by and through all grades of management.

OUR FRONT COVER

Our cover picture shows a chronocyclegraph in operation. This was developed by the well-known work study pioneer, Frank B. Gilbreth, to make it possible to record the path of motion of an operator in three dimensions by attaching a small electric light bulb to the finger, hand or other part of the body and photographing with a stereoscopic camera the path of the light as it moves through space. This is called a cyclegraph. Later the light bulb was made to flash on quickly and off slowly, rapidly at predetermined intervals. This is called the chronocyclegraph from which time, speed and direction of the movement can be analysed.

From the chronocyclegraph it is possible to construct accurate wire models of the motion paths which can be used to demonstrate correct motions and to assist in training new operatives. Folding a towel and sorting papers are two favourite trial operations in which economy of movement can easily be shown.

A Small Firm Shows How Work Study Can Pay Large Dividends

By ROBERT McKINNON

One more proof of the work study pudding is given in the following case history. The firm concerned is a small one; it does not make a conventional product, nor is it housed in a spacious modern factory. For all that, by reorganising their work processes over the last four years, they have benefited themselves, their customers and their workpeople to a truly remarkable extent.

ELSEWHERE in this issue the Principal of the College of Production Technology makes the point that work study knows no industrial frontiers. It is not some esoteric technique available only to firms of a certain size or making some specific type of goods. Nor does the firm who would apply work study require to be housed in a bright, modern factory equipped throughout with the latest machinery.

Examples of how work study can be applied to any industry are in fact legion, but there can be few more outstanding proofs than the case history of *William R. Stewart & Son (Hacklemakers) Ltd.* of Dundee. At this firm's works the wages bill, for approximately the same number on the pay-roll, has gone up by 62 per cent and turnover has increased by over 100 per cent in the four years since their work study scheme has been in full operation, while at the same time the customer has also reaped a benefit in price reduction of 15 to 20 per cent in the last two-and-a-half years (i.e. once the initial cost of the scheme had been covered). This, too, in a company whose 150 labour force includes 17 per cent disabled people as against the statutory 3 per cent.

First, however, a word about hackles, or card lags as they are sometimes called. These are slightly curved wooden staves, measuring 2 ft. in length by about 3 in. in breadth, and literally bristling on one side with hundreds of accurately machined steel pins. They are fitted to the rollers of textile machinery used in the preparing processes prior to spinning. Their function is to comb out the fibres of the raw jute and flax after it has come into the factory. Card lags are now also being used on synthetic materials such as terylene, nylon, orlon, etc.

Stewart's had been making hackles more or less by traditional methods until 1951 when they were faced by a rapidly rising demand for their product. They decided, therefore, to call in outside advice, and for nearly a year management consultants were busy in the factory "combing" out the work processes in several departments. As a result, a suitable technique of work study was evolved and, although the methods of application remain basically the same, economy and efficiency have raised output to a point where it is adequate to demand.

On the decision to throw the factory open to industrial consultants, one of the directors commented:—

"At first we wondered how any outside firm could tell us our own business, especially a business like hacklemaking. Then again we wondered whether a small firm like ours would be able to afford the services of consultants for an extensive reorganisation. However, we soon realised that the principles of work study apply to all and any industries, though, of course, the details vary with each case. As a matter of fact the experiment was a complete success and we cleared our costs within two years."

The reorganisation began in the woodworking department that feeds all other sections of the factory. Results were forthcoming almost at once. For example, studies on the cutters used on one group of machines led to a considerable reduction in machining times. Bonus incentive was also introduced to which was added later a yield bonus to encourage operatives to make the maximum use of timber. A further saving of timber

A section of the pin-filling department. Teams of boys put in the card pins by hand while the man in charge secures them to the stave by running them under an automatic hammer. One million pins daily are put in by hand.

—Scottish beech is used for making the staves—has since been effected by buying only chosen sections of the trunk.

Next to come under work study were the drilling and filling departments where the staves are drilled and then the pins filled in by hand.

Hand operated drilling machines had been replaced by special purpose high speed automatics, but no machine has yet been perfected to take the place of the century-old operation of hand-filling. Work study, however, showed it could be improved. Filling is carried out in two stages. First, the pins are lightly fitted into the holes; then they are passed to another operator who manipulates a specially designed power hammer which knocks home each pin individually and accurately.

Quite without doubt the most fascinating process in the whole works is at this filling stage. Here most of the operatives are young boys between the ages of 15 and 18, many of them quite small so that they naturally look for jobs which do not require great muscular strength; little neat fingers are also an advantage in handling the fine gauge pins. They have acquired a truly remarkable knack of grabbing a fistful of short pointed steel pins in the left hand and, without looking, working them into rows between forefinger and thumb. The right hand plucks some six or eight at a time by the butts and, quick as any conjurer, flashes them into a row of holes in the stave. A quick mallet thump secures them temporarily. In any day some million pins are filled in this way by 35 fillers.

Previously, four pin fillers worked to one hammer operator, but it was shown that the number of pin fillers could be increased to six. Provision was made for an extra worker to do the fetching and carrying thus saving interruptions to the work of the more skilled operatives who, as a result, increased their productivity by over 30 per cent.

The firm's metal department produces the steel plates for staves used in the very heavy preliminary teasing of fibres. These steel plates are punched and then screwed on to the wooden staves, an operation carried out before the wood is drilled. Plates tended to pile up at the guillotine located at one side of the section. A more logical layout was planned so that the plates, flowing from one operation to the next, were automatically placed within easy reach of the next operative. The guillotine was moved to a more central position, and output rose as a result.

Work study researches also showed that operatives could use almost all the machines in the metal section at much greater speeds; when a new rhythm involving well-nigh simultaneous use of both hands was introduced on one of the punching machines they were won over. Now this section shows a productivity increase of more than 50 per cent.

Workers Won Over

The people in the Inspection Department, however, felt at first that the quality of their own work would suffer through any attempt to raise the output of individual operatives. After discussion, though, it was decided that a maximum individual output would be fixed for each examiner and his bonus paid against this output. Of this bonus about one-third would be for "no complaint" from the customer. With these safeguards examiners accepted the scheme, through which their output has gone up by more than 30 per cent.

The next step was to develop a proper system of production control. The method of work order was simplified and a large planning-board introduced, on which colour indicators show the monthly delivery programme, the actual delivery, and current and previous arrears as well as the actual progress of each individual job. In the course of this work it became apparent that firms were quoting a wide variety of specifications in ordering staves. After an analysis had been made, customers were approached with proposals for standardisation, to which they readily agreed, with a resulting improvement in the firm's output. One development in production control—the allocation of a number specification to each stave—greatly helped standardisation and simplified ordering.

In the storage section where the wood is stacked and dried, it was decided to pay an incentive bonus on layers of planks stacked up to 20, and a bigger bonus for stackings above this figure. Stacking was made the job of a team of three men and the bonus paid collectively to the team.

Next came the task of simplifying the classification, storage and dispatch of pins in the pin stores, where the firm carries a stock of several hundred million. *Stewart's*, in fact, handle some 1½ million pins a day and supply quantities of these to customers. In the stores a number of new racks have been introduced and given a simple alphabetical classification. After passing a rigorous initial inspection a fresh supply of pins is placed on a rack and its alphabetical and numerical position recorded. Identification of an order has thus been simplified. Mention should be made, too, of the automatic shaking device which, by vibrating a box of pins on a platform, produces an alignment of the pins and a saving in space and thus has led to an improvement in packing.

As the pins are usually dispatched in containers weighing roughly 32 lb. each and containing about 15,000 pins, the saving and improvement in handling has been quite appreciable.

Throughout the adoption of the new ideas relations between management and the workers were always good, and though there has been a certain amount of redeployment of personnel, as a result of improved method, no worker lost his job. The whole operation was carried out in fact with the minimum of fuss and bother, but so far as wages and output are concerned the results have been truly spectacular. And whereas once there were unavoidable delivery delays up to two years, *Stewart's* can now do orders in less than two months. For "hackles" substitute "ships, shoes, ceiling wax". There is always room for improvement whatever the product.

Notice to Subscribers

Owing to the recent printing dispute it was not possible to publish the March issue of "Personnel Management and Industrial Equipment". The March issue has, therefore, been combined with the April issue.

The Editor and publishers regret any inconvenience caused to subscribers by events over which they had no control, and they now inform readers that subscriptions to this journal will be extended by one month to make up for the non-appearance of the March issue.

These Visual Aids Help Management

By ROBERT MITCHELL

INTRODUCED to Britain in recent months by the *Sheldon Claire Company* of Chicago is an interesting form of visual communication on the shop floor. The idea is based on a 50-week campaign using high-quality colour posters with the object of convincing operatives of the very real need for co-operation between themselves and management. The posters—which range from the poignant through the dramatic to the humorous—are separately and together designed to drive home the message that "prosperity is indivisible", that the well-being of all ranks in a firm can only be ensured by a joint effort.

Though new to this country, the *Sheldon Claire* visual communication campaign has been operating for a number of years in the United States and, including Canada and Europe, some 20,000 firms large and small are now using it. Says Mr. J. D. Aptaker, the firm's representative over here:

"Our programme hinges on the assumption that a worker is not going to co-operate with management just to help management do a better job. There must be something in it for him. The task is then to make the man on the shop floor realise that he sinks or swims with the efficiency of his firm because, ultimately, the customer is the boss of both. Management, however, must sell this idea to their workers using all the sales techniques they employ when winning an order from a customer. It is to this end that our posters are designed."

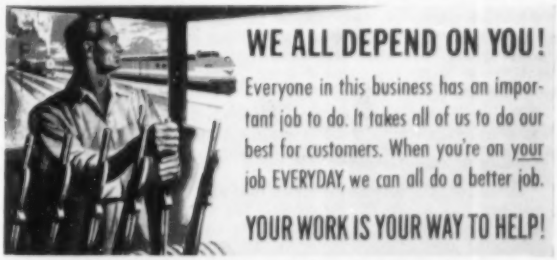
A typical campaign begins with a letter from top management to foremen and supervisors explaining how it is to be carried out and what its purpose is. This is backed up by an introductory talk by the *Sheldon Claire* representative. "It is essential to win the foreman's support", stresses Mr. Aptaker, "because so often he is management's best salesman. He is the direct link on the shop floor and without his interest our posters can lose as much as 50 per cent of their impact."

The actual presentation of the posters is spread over twelve four-week periods, each of which is devoted to a specific factory theme in which management and workers have a common interest. These themes are as follows: "Our Jobs And—
Absenteeism (the theme illustrated here), Competition, Co-operation, Costs, Customer Satisfaction, Customer Service, Productivity, Quality, Safety, Suggestions, Time, and Waste."

There are four posters to each theme so that each week a fresh one appears in the workshop. Before each theme, or chapter, begins, however, foremen are sent a bulletin on the specific problem being dealt with.

Among British firms who so far have tried out the *Sheldon Claire* idea is a large steel and chemical works near Sheffield. A survey of reaction among works personnel showed that, among 37 people questioned, all but two could recall specific posters and that only three thought the programme had been of no benefit.

Asked why Britain was among the last of the European countries to which the posters have been introduced, Mr. Aptaker replied: "We wanted to test it first in some of the toughest markets over here. And if we could succeed with the highly individualistic French market we would know we were justified in introducing it elsewhere."


WE ALL DEPEND ON YOU!
Everyone in this business has an important job to do. It takes all of us to do our best for customers. When you're on your job EVERYDAY, we can all do a better job.
YOUR WORK IS YOUR WAY TO HELP!

Management News & Ideas

THE MAGIC STIMULANT

THE use of the pay packet as a means of communication may be effective, but it is fraught with the unexpected. So discovered the Oldham building firm, *A. Pellow and Son*, when a few weeks ago they put a message in the pay packets of their 90 workers. This communication—a masterpiece of caustic humour—caught the imagination of the Sunday newspapers, and the firm "enjoyed" a brief spell in the national limelight. Their message was as follows:—

"It has come to the notice of the management that employees have been found dying on the job—and either refusing, or neglecting, to fall over", the letter began.

"This practice must cease forthwith. And employees found dead in an upright position will be immediately removed from the payroll.

"In future, if a foreman notices that an employee has made no movement for a period of one hour it will be his duty to investigate the cause, as it is almost impossible to distinguish between death and the natural movement of some employees.

"Foremen are advised to make a very careful investigation by holding a pay packet in front of the suspected corpse, as this is considered to be a most reliable test.

"There are, however, cases where the natural instinct has been so deeply ingrained that the hand of the corpse has made spasmodic clutches after rigor mortis has set in.

"Whisper 'Sunday work.' This has been known to restore animation to a body which has been motionless for a week.

"The foregoing tests should not be used on foremen or assistant foremen as in these cases movement of any kind is unnecessary."

The management insisted that it was all meant as a joke.

Pin Money Is Out

ANATHEMA to Major J. W. R. Bathe, 80-year-old honorary secretary of the "Over Forty-Fives" Association, is the employer who rings up to say: "I want a man with a pension of about £4 a week, then if I pay him £5 he will be doing nicely." For Major Bathe, who insists that there is no substitute for experience, believes that every man should be paid the rate for the job.

It is this tenacity that has gone a long way towards the successful functioning of the Association which is now able to report that the prejudice of employers against giving jobs to elderly people is now being broken down. Men recommended by the Association have in fact proved so able and conscientious that employers are making further requests as soon as suitable jobs are available.

This voluntary body now has some 3,000 members who pay an annual subscription of 5s. Last year it was finding jobs at the rate of 40 a month for men whose services would otherwise have been lost to industry, and now a second office has been opened in Leeds in the charge of Mr. Peter Houghton, 69, a former manager in industry. The association has all sorts and conditions of men on its books: former service officers, colonial and civil servants, engineers, office executives and so forth—men who have lost their jobs through no fault of their own and cannot exist on their pensions. One retired judge, for example, who did not serve long enough to get a pension is now happily employed as a night watchman.

Group Idea Born

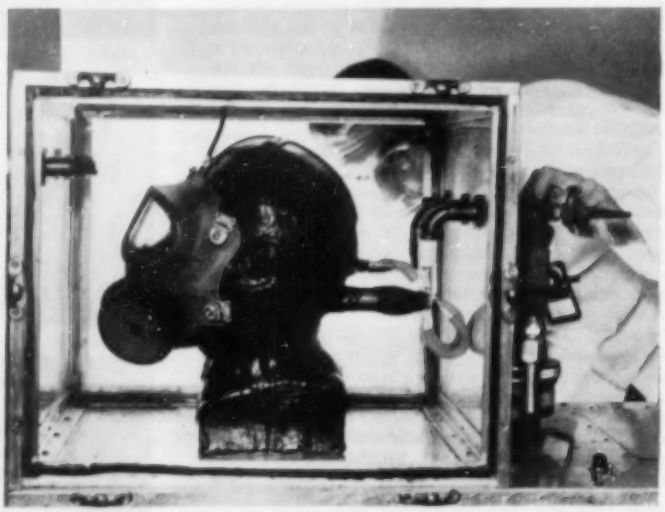
REPRESENTATIVES of a number of small Birmingham engineering firms decided at a meeting in January to form a group apprentice scheme for the city. Sixteen firms have so far agreed to join the scheme and form a committee. This decision is probably an outcome of the researches of a Birmingham team who studied Western Germany's apprentice training scheme (see *Personnel Management* February) and who were very impressed with this particular feature of the German scheme.

The object of the scheme is to overcome the difficulty of limited training facilities in small and medium-sized firms and to enable them to offer the same standards of training as the larger companies which run their own apprentice schemes. Under it apprentices will be able to interchange between firms for short periods to give them wider experience.

P/O Prunes Pruned

THE work of the Royal Air Force is to be made more efficient by work study. Several thousand posts may be saved in the next year or two. A special staff called the Manpower Utilisation Committee has been set up, the senior staffs of which have been specially instructed in work study in industry as well as in the Air Force itself. A number of science graduates serving as National Service officers are helping to work out the new techniques. An air vice-marshal was attending a work study course in industry and when he returned his special job would be to "thrust on all this work study business."

MECHANICAL GUINEA PIG



This rubber head devised recently by the **American General Electric Company** simulates human breathing through multiple pumps fitted to the device. A filter inside the rubber head's "windpipe" collects radioactive particles that find their way through the mask. Thus a gauge of the mask's efficiency is obtained.

Face Showing

"I HAVE seen it said sometimes that because the railways are nationalised now, and because the show is so big, the railwaymen do not know who is their boss. If that is true, which I doubt, it is not a very good tribute to the influence of the popular press. My own opinion is that my ugly mug is as well known to railwaymen up and down the country as were my distinguished predecessors in the railway world." (Sir Brian Robertson, Chairman, British Transport Commission).

Fire Facts

A SPECIAL bulletin put out recently by the Fire Protection Association at 15 Queen Street, London, E.C.4, is devoted to anti-fire precautions in department stores. It describes ways in which fire can be prevented from spreading and how to ensure adequate escape routes. Also suggested are precautions that can be taken against the principal causes of fire, suitable fire extinguishing equipment and a plan of action to be followed in the event of fire. A free copy of the bulletin can be had on application.

Fuel Efficiency

A GRANT of £5,000 has been made available by the National Industrial Fuel Efficiency Service to meet increased costs for the examination of boiler operators taking courses of practical training for the more efficient use of fuel.

This year the number of entrants for the examination will be 2,000, compared with 960 in 1955 and 756 in 1954. Industrial, professional and technical organisations will be approached by the City and Guilds of London Institute to help in compiling a national panel of top-grade local examiners.

Imaginative Course

IN the belief that foreign travel can stimulate the imagination—an important factor in industrial design as well as in other business activities—*Richard Lonsdale-Hands Associates* recently started foreign language lessons to encourage their staff to holiday abroad.

Weekly classes in French and Italian are held in the office. Response has been remarkable—57 out of a total staff of 350 are taking one or other course, in some cases both.

Could not industry as a whole, the firm asks, consider this undoubtedly valuable means of broadening the employee's outlook and, also, of bringing staff together in a common interest outside their actual work.

Lead From America

WRITING last month in *The Times Review of Industry*, J. Munro Fraser, senior lecturer in human relations at Birmingham College of Technology, said that one is regretfully forced to admit that the issues which crop up in confused and disguised form in British industrial relations may be more clearly grasped across the Atlantic. While the U.S.A. has by no means solved all its industrial problems, he says that these "have at least been stated in a form which invites rational consideration by open-minded observers."

Two other points made by Mr. Munro Fraser were (1) that our wage structure, considered objectively in terms of equitable remuneration for comparable skills and responsibilities, was quite chaotic, and (2) the contemporary situation is that labour "cannot be employed on any terms other than responsible partnership in a common enterprise."

Reason v. Instinct

TALKING on the subject of "The Human Implications of Work Study" recently, Sir Lincoln Evans, vice-chairman of the Iron and Steel Board, reminded his audience of business men that if work study was to be introduced to a factory it must be made acceptable to the normal, unreasonable, prejudiced, sensitive human being.

"Productivity" to the worker meant "somebody is not doing enough; somebody ought to do a bit more, more sweat, more strain." On the other hand the workers' attitude to work study was probably, "It is probably a very good thing for the other chap, but not for me." Both of these were misconceptions. Management went wrong, said Sir Lincoln, in thinking that the "ordinary chap in the workshop" ought to be seeing things as they saw them. They assumed that when they came up against instinctive opposition that the fellow was acting out of sheer cussedness. The first thing management ought to do was to create a climate of confidence. It was their duty as leaders to teach, to get over to the men what they wanted. "Explain, explain, explain", commanded Sir Lincoln.

Reading Refreshment

SENIOR business executives from London firms are going back to school for two days a week—to learn how to read more quickly and end the tyranny of the choked "In" tray. Every Monday and Wednesday afternoon a dozen or so businessmen meet at *Wall's* ice-cream marketing headquarters at Park Royal for lessons in "speedy reading"—an American idea recently introduced into this country.

"Pupils" are given reading tests from books and by means of films and answer questions on the text afterwards. It is claimed that reading speed can be increased with no loss of comprehension.

"Most people are capable of reading much faster with a little tuition", said Mr. John Bridges, *Wall's* chief personnel manager, who is taking the course. "With the amount of paper work in industry today, these classes can result in a valuable saving of time."

Gallery Of Progress

SMALL firms are to get a chance of singing their own praises at the second Production Exhibition and Conference which is being held at Olympia from May 23 to 31. In co-operation with the British Productivity Council, the organizers have invited each local committee to select from its area small firms with a good story to tell. More than 200 such firms will form a "gallery of progress" where space will be provided for them to show by visual aids and live demonstrations what they have done to raise productivity in their factories.

As with the first exhibition held two years ago, this one will demonstrate the science of productivity and the techniques for increasing their level of production, as well as the quality of the processes by which this production is achieved.

The conference, organized by the Institution of Production Engineers, which is to run concurrently with the exhibition, will develop the theme Investing in Success, and will explore the forecast by the Chancellor of the Exchequer that the standard of living can be doubled in twenty-five years.

Unemployment Unless—

PRODUCTIVITY AND REDUNDANCY is the title of a recent B.P.C. Action Pamphlet which tells in non-technical language why redundancy arises in a healthy economy, how individual hardships can be avoided, and how individual firms can deal with the problem.

The pamphlet is the work of an editorial committee made up of men from both sides of industry and expresses a joint view. It has been highly praised by both the Minister of Labour and National Service and the Leader of the Opposition.

It carries a sting in its tail: summing up, the pamphlet strongly emphasises that only a prosperous nation can go on providing new jobs to replace those that have been rendered unnecessary. The most efficient firms in industry, it points out, will still be the surest providers of continuous employment. It concludes with the words "A system that attempts to reject new methods and to shut itself up against them will not only produce a steadily falling standard of living; it will provide all the conditions for wide and sustained redundancy."

Can Industry Survive?

The 4th Convention of the Society of Industrial Civil Defence Officers will be held at Scarborough from September 18 to 21 next. One of the most important papers to be read is "The Survival of Industry under Conditions of Nuclear Warfare."

Should Foremen Have the Power to Sack?

Some Thoughts on the Link Between Authority and Discipline

IN January we opened a discussion on the subject of discipline in industry. This subject takes up a great deal of supervisory and management time and often causes much frustration and worry. Your letters to me reflect this and also open up so many different aspects of the subject that we shall need more space in later months to continue the discussion. Mr. K. E. Grace, of 23 Nutfield Road, Thornton Heath, Surrey, defines discipline as "a matter of the imposition and execution of rules and regulations contributing to the promotion of production and profit of the company and the welfare of the staff as a whole. Its application should be governed by the simple rules: (1) Is it necessary? (2) Is it fair?" He applies this principle to the case of the employee who felt he had a right to drink tea out of a flask at any time of day, quoted in our January issue. He says: "If, in the case of the insatiable tea drinker, the controller is prepared to let *all* his operatives drink tea as often as they wish, then he has only himself to blame if he is then called upon to arbitrate upon whether special facilities should be made available for making it and how long should be spent drinking it, and finally, one presumes, whether any work should be done at all. If he is not prepared to let everyone drink tea at any time, then such activities should be confined to the recognised break periods."

Here, then, we have two basic principles of discipline, possibly acceptable to all of us. Firstly, we all recognise that some rules are necessary to regulate the affairs of men. When we play games we willingly obey the rules—we know the game will not be enjoyable otherwise. We would not get far down the road in a car if we did not abide by the law which says we must drive on the left-hand side of the road. A lot of laws in all walks of life protect our freedom to live and work peacefully together. We have, however, through our representative system of government, had a say in the *making* of these laws. We have disciplined ourselves. Gorer, in his book "The English Character", suggests that the English are "self-policing" people. Thus if we *can't* see the necessity for a law or a rule, we break it without any feeling of guilt. (*See page* 539.)

Many managements have recognised this need for self-discipline and have made the works rules a subject for Joint Consultation between all sections of their industrial community. Discussion (often heated and always lively) on the necessity and fairness of the rules has gone on *before* they have been made into law. The final rules are thus self-imposed. Within this broad framework, the authority of supervisors at different levels in the hierarchy is clearly defined and each man is expected to use this authority and to give all necessary orders. Otherwise he is liable to run into the kind of situation described by Arthur Grimble in his book "A Pattern of Islands". Talking about his university days, he says: "I became first secretary and then, in the normal course, captain of my college cricket XI. . . . As secretary I invariably took orders from the captain—as captain I invariably took orders from the secretary, while the team invariably played the game as if neither of us was there!"

N.C.O.s or Subalterns?

Should the authority of supervisors include the final authority to dismiss? Many foremen feel that they cannot keep discipline if they have not this power. Mr. Grace thinks otherwise. He says: "In the case of supervisors, they should be given as wide a scope as possible, but, in the same way that N.C.O.s in the Services are not given the power of allotting punishment, neither should a supervisor be given the power of dismissal, for the nearer one gets to the trees the less one sees of the wood, and supervisors, being human, are subject to personal likes and dislikes which may prejudice their attitude to a situation and cloud their judgment and consequent action. Once a supervisor takes action he should be backed up to the hilt by his management, unless such action completely outrages all sense of justice. This may at times call for the judgment of Solomon; for a foreman to accuse a workman of theft is one thing; but for a workman to accuse the foreman is another, particularly when he backs his accusations with a certain amount of circumstantial evidence and the foreman's line of defence is to demand the man's instant dismissal upon the grounds of slander."

Such a limitation of their authority would have saved one foreman from making a bad mistake. One man in his department was always coming in late in the morning. One day the foreman decided the time had come to take drastic action so he dismissed the man, refusing to listen to any more excuses. Afterwards the other employees went on strike for they knew that that particular morning the man had rushed to the hospital to give his wife a blood transfusion. Another foreman decided to dismiss a man with a beard on the grounds that he must be neurotic! Luckily, before he could put his plan into action someone explained to him that the man lived in an apartment house with 12 other people and he just couldn't get into the bathroom in the morning!

What do you think? Do you have the power to dismiss people under your control? Do the actions of the foreman in the illustrations I have just

(*Continued on page 558*)

Make the Form Fit the Selection Technique

By WILLIAM DURHAM, M.A.

"It is well to study the technique of selection before designing the application form", stresses the writer in his second article of the series. He also warns against forms asking for too much personal detail and so make the candidate resentful. Where wages are concerned a clock number control card can prevent a lot of confusion and at the same time makes for a useful cross reference.

THE application form is primarily an integral part of the interviewing technique. It has other functions, however. It may be part of the permanent record system. It can be retained, in the event of too many applicants for one job as a reference for further vacancies. In small communities it may be retained after rejection of the candidate to give a wider picture of the local labour force.

Its layout and structure will be influenced by all these factors, but the basic information required is much the same—i.e., name, address, date and place of birth, education, employment history (including reasons for leaving previous jobs), state of health, etc. Beyond these lies a very wide range of other possible questions, and the differing stress laid by form designers on these other matters indicates no common trend of thought.

Too much detail makes the form cumbersome and difficult to compare with other forms. If it must cover more than one side of a page, then the vital information should be on the front and the hobbies, interests, etc., kept on the reverse. There is a further danger in detailed forms. While a candidate may readily fill in details he can see are relevant, he may be resentful if he has to complete questions which appear to be private and irrelevant. A skilled interviewer may obtain this information without offence in the course of discussion with the applicant and adequate blank space is needed to record it.

Filling Points

Applications are normally completed in the candidate's own handwriting and without supervision. Instructions on how to fill in the form must be included on the form in print large enough to be seen, and the average long-sighted labourer does not bring his reading glasses with him when he applies. One firm overcomes this problem by handing the applicant a completed sample form in which the details are written in block capitals. It is backed with cardboard and kept clean by covering it with cellophane.

Can one form be used to cover all types of applicant? Most firms have different forms for works and staff and often a third for apprentices. But there is still a wide difference between the information required of an unskilled man of 55 years and a school leaver on the works side, or on the staff side between an industrial nurse and a junior typist, or between a sales executive and a stores clerk. Supplementary pages can be inserted for those classes which cannot be fitted to the standard form, but variation in forms can be an expense which is not easy to justify.

A certain amount of blank space for the candidate's use is essential either to elaborate on some matter where the standard space was inadequate, or to mention some qualification or opinion which does not fit elsewhere. A statement that the information given is true and that, if selected, the applicant will abide by the company rules and regulations is usually placed over the space for signature. Manual dexterity and intelligence tests results will be recorded somewhere on the form and the interviewers, recommendations and decisions are normally included. Space must be allowed for sections covering action to be taken, receipt of National Insurance Cards and P.45, viewing of Birth Certificates or Educational Diplomas, clock number allocated, commencing rate, etc.

Before leaving application forms it is perhaps worth stressing that there is no proof that the domestic origin of the applicant, his hobbies, his clubs, his father's occupation and his ability at games have any value in assisting to forecast his eventual success at work. It is therefore well to study the technique of selection before designing the form.

Many American companies provide separate forms for interviewers to record their impressions of the applicant. They are designed to assist in the objective evaluation of the applicant and allow for rating on a wide variety of factors. "Judgment Blanks" having a series of questions or a rating schedule which are completed by the interviewer immediately after the interview is over are also

used. An "Appraisal Summary" may be appended with a graph to be shaded in to show the "test profile" of the candidate. A template can then be applied for rapid sorting on suitability for different jobs.

Wages Information

One of the most important features of the employee record system is to ensure that the Wages Department is completely and accurately informed of all changes affecting their work, and further, to assist them to put the changes into effect. The more often information is copied the greater the danger of error creeping in.

One method of avoiding this is to use the same addressograph plate that prints the clock card, wage packet and wage sheets to print small cards bearing the essential data. One copy of this card can be sent to the employee's manager, one retained by the Wages Department and one by the Personnel Department. All copies should be signed by the person responsible for the accuracy of the record.

This system may not be feasible owing to geographical difficulties or divided control, but something similar is essential to avoid any disparity between the records and the practice of the Wages Department.

Unless some standard procedure is adopted, it is not impossible to allocate a clock number which is already in use to a new starter. To avoid this a simple clock number control card can be used. It has the second function of providing a cross reference in numerical order if the files are kept alphabetically.

The full range of clock numbers likely to be used in the course of the year are printed on separate small cards. The name of the present user is typed on it. Should he leave or be transferred to another number in the course of the year the date he ceases to use the number is typed on it, and the card is put in the "out of use" file until the end of the income tax year. In April the cards are brought back into the "available" file.

Many firms keep separate forms for labour requisitions, rate increases, promotions and termination. Unless it is intended to go into considerable detail on each of these, then a combined form can be used. This reduces the stocks of stationery that must be carried, and the number of forms which the supervisor needs to use.

The front of the form can be used for transfers, rate increases, address change notifications and the reverse for requisitions and terminations.

Job Description

Boxes for any necessary authorisations must be included and the routing of the form clearly indicated on the front. The requisition section should leave space for the interviewer to insert the names of those who fill the vacancies. In order to design a change note which will successfully accomplish its many duties it is as well to sketch a flow chart so that the full details can be visualised and no function overlooked.

Much of the information often inserted on requisition forms would be more properly maintained on permanent job description sheets which indicate the minimum and the preferred requirements of each job. Close personal liaison between the Personnel Department and the supervisor requiring the new labour must be maintained so that the degree of urgency and any variations from the standards laid down in the job description sheet can be known. It is only when a new interviewer is appointed that these sheets are really useful, for to be effective an interviewer should know the jobs fairly intimately. Such forms are more often used in connection with a job evaluation programme which will be dealt with in a later article.

Without some systematic control, it is easy enough for overtime to run riot. In any case there are statutory obligations to fulfil in the case of women and young persons.

Since many supervisors are unfamiliar with the regulations concerning women and youths, it is better to have a central control on the matter. This is especially so if "individual overtime" clause is used, since it is then necessary to record both how many hours and how many weeks each woman or young person has worked over the number of hours scheduled on Statutory Form 1. A standard form to be completed by the supervisor who requires the overtime is also necessary so that the Personnel Department can be informed before the overtime is worked. The Personnel Department can then send the necessary notification to the Factory Inspector and put up the requisite notice.

Overtime normally requires sanction from the production executive or works manager. A simple form stating the number of workers required, the date and time of the proposed overtime and the reason for it can be completed by the supervisor, and authorised by the responsible executive.

Where rates are increased on birthdays as is usual up to 21 years, some system giving a reminder of this is required. Where punch cards are available they may be used, but it is normally more convenient to have small cards with the name, clock number and date of birth. These can be filed according to the month and day (not the year) of the birthday, and discarded when the 21st birthday arrives. Sixty-fifth birthdays can be picked up while doing a periodic age grouping analysis.

To be continued.

How to Design a Good Application Form

1. ***First study the selection technique.***
2. ***Avoid too much detail. A candidate may resent this.***
3. ***Choose print that can be read with comfort.***
4. ***Leave a certain amount of blank space where the candidate can elaborate if necessary.***
5. ***Allow space for sections covering action to be taken and to record receipt of official documents.***

A wide range of sample forms can be borrowed from the Information Department of the Industrial Welfare Society, 48, Bryanston Square, W.1, but it will be recalled that every form must be integrated with the system in which it is used. It cannot be adopted because it "looks nice".

Have We Policed Ourselves to a State of Inertia?

Effect of Repression on Our People at Work

MR. GEOFFREY GORER, author of "The Americans", has recently written a book about the English called "Exploring English Character". This book should be read by everyone in industry whose work brings them into contact with other people. Shop stewards, supervisors, foremen, and, above all, senior executives will find this book throws light on some of the most important attitudes which determine the behaviour of the English. The material was gathered (through the co-operation of "The People") by asking volunteers to fill in questionnaires, and over 10,000 people from all classes of society responded. The questionnaires covered a wide range of subjects. The industrialist will find those parts of the book which deal with an Englishman's control of aggression, with his law-abiding behaviour, with his love of moderation and with his inertia, throw a great deal of illumination on people's behaviour at work.

The English used to be quarrelsome, ready to fight, and noted for their savage and cruel amusements. The answers to these questionnaires reveal that one of the main preoccupations of the modern Englishman is to control his aggression in himself and his children. In analysing the chief defect in their own characters, over one-half of the respondents list bad temper (nagging, surliness, taking offence easily, etc.) as the fault they are most ashamed of.

Parents are "overwhelmingly concerned" with uprooting some aspect of aggressive behaviour in their children. In answer to the question, for example, "If you were told a small child, say three to eight years old, had done something really bad, what would you think the child had done?" 88 per cent of the respondents mentioned some form of aggression—theft, damage to property, cruelty to animals ("shut the cat or puppy in the oven"). Thus Gorer concludes that the Englishman, trained from early youth to repress his natural aggressive instincts, spends a large part of his available adult energy in keeping this aggression under control. Gorer suggests this may be why the Englishman is apparently lazy and slow.

Many of the respondents mention sloth and inertia, lack of energy —the "night starvation" of the popular advertisements—as another of their failings. It is also a possible explanation of our "shyness"—we are afraid of our aggressive instincts and "project" this fear on to strangers so that we then fear they will do *us* harm. If this is a correct analysis, the implications of this deeply-rooted aspect of British character for such industrial problems as low output per man hour, lack of interest in trade unions, lack of support for joint consultation, refusal to take on responsible representative jobs, and resistance to change are disturbing and deserve further serious study.

Here is a challenging review by MARGARET BROWN of a challenging book whose author suggests that we as a race may have repressed all our aggressive instincts to the point where we have also whittled away our natural fire and initiative. In short, we may have thrown out the baby with the bath water. This could well apply to industry too, so we would be particularly glad to have readers' views on the matter.

Linked with this control of aggression is the Englishman's love of law and order. A large majority of our countrymen are enthusiastic supporters of the police—and from the replies Gorer deduces that the policeman, and what he stands for, has become an ideal figure in the community. As one respondent puts it: "I believe they (the police) stand for all we English are—maybe at first appearance slow perhaps, but reliable and kindly."

Again this training in the moral virtues begins in early childhood. Parents see their children as full of the "old Adam" and it is their duty as parents to impose discipline on the child "because a child like a rose bush if untrained, will 'sport back' to its early beginnings—e.g., a wild rose".

"Fiddling" (getting round regulations, stealing from large corporations or institutes, etc.), however, is not considered morally wrong. Gorer suggests that this is because the "strong conscience [of the English] is *self-policing*". He says: "If an attempt is made to replace this self-policing by external controls, particularly by unenforceable laws of which the necessity and usefulness is not immediately obvious, the most valuable qualities of the English civic character . . . will inevitably be sapped." Again the implications for industralists are clear. The modern English administrator has a body of self-disciplined and law-abiding human beings to lead. What methods is he going to find most successful?—an application of "unenforceable external laws"—or an appeal to the group to impose its own internal disciplines and sanctions? Have we not here an excellent foundation on which to build sound systems of joint consultation and similar systems of self-government? Gorer links these two major attitudes and applies them to war. When we see a war is "just" and "fair", a legitimate outlet for all our dammed-up aggression is provided. "John Citizen is trans-

formed into John Bull with a completeness which regularly confounds our enemies and surprises our friends. Strong conscience and aggression join forces and shape the world."

Recent industrial history has shown that it is not always necessary to have an external foe on which to release this aggression. A "just" cause can provide the rallying point for industrial strife as some of our strikes have shown. The latent power is there; will it be evoked to rally behind the supporters of industrial regression by the actions of socially unskilled managers?

The Middle Way

One or two other aspects of English character deserve a brief mention. The Englishman reveals himself as a man of moderation; for example, too much or too little of any qualities are equally considered as a weakness. So people feel they can be "too confident or not confident enough", "too weak, or not forgiving", "too tidy, too untidy". Again, the Englishman does not give or expect praise for work well done or for the display of some desirable moral quality—he does, however, expect to be reproved or to reprove others if they fall below the required standards. In Gorer's words: "Though deviations from the proper course call for remedial action, conformity demands relatively little recognition." This, too, is a well-established pattern in industry but managers are losing a potential force of energy by adhering to this wider social pattern of behaviour in which they have themselves been reared. Modern research has shown that a word of praise has great power and is a much greater influence for good than a corresponding word of blame.

There is no space here to show the different emphasis placed on these attitudes by different regions and classes. There are differences it is true; but the interesting conclusion is that these are differences in emphasis only; the whole population is homogeneous in its beliefs and attitudes to a surprising degree. Owners, managers, supervisors, shop stewards, workers share common ideas on such matters as how to bring up children or on how to deal with an erring spouse; on romantic love and the institution of marriage, on aggression and obedience to the rule of law. Here Mr. Gorer has perhaps shown that there is a solid foundation on which to build lasting industrial peace.

What is Your Factory's Supplementary Wage Bill?

By WILLIAM DOUGLAS

It is not always realised that welfare expenditure can add up to a supplementary wage packet. Here modern practice in this field is analysed and it is shown that welfare costs may vary between 8 and 24 per cent. of the total annual wage bill. These costs are steadily increasing but the author points out that nowadays many benefits are taken for granted and can scarcely be classified as "welfare".

WHEN a worker is engaged to-day, the weekly wage which he is promised is no longer a measure of the cost to the firm of his labour. The various forms of benefit he receives from the company can add up to a surprisingly large percentage addition to his wage packet. There is no doubt whatever that this trend has been increasing, especially with the development of pension schemes and sick pay schemes, since the war.

The only valid measure of these costs is to translate them into percentages of the total annual wage bill and a rough summary of these costs would run, giving minimum and maximum figures, as follows:—

	Min. %	*Max.* %
Holidays with pay ..	4	6
Pensions	1	9
Sick Pay schemes ..	—	2.5
National Insurance (Employer's contributions)	2	3
Canteen subsidy ..	—	1
Other employee amenities	1	2.5
Total	8	24

During 1955 the average gross adult male wage in manufacturing industry (for 48.6 hours) was stated by the Ministry of Labour to be £11 5s. 0d. For women it was £5 13s. 0d. (for 41.8 hours). The extra costs to the employer in terms of cash were, therefore, from 18s. to 54s. for the male employee and from 9s. to 27s. per week for the female employee.

We have, of course, in reviewing welfare costs, two main difficulties: to spread out items of capital cost which may well be omitted from surveys of annual costs; to determine how far we should extend the term "welfare".

It will be realised, however, that canteens, sports pavilions, and cloakrooms are built to last a lifetime. They are tending to become more and more lavish, but their capital costs averaged out over their years of life will probably amount to quite a low figure per head.

The other difficulty is much more real. Is the issuing of overalls in a food factory a welfare amenity? Would the free issue of safety boots in a foundry be classed as an employee benefit? Should suggestion scheme awards be included? What about hostel accommodation for apprentices? It will be realised from these few examples how difficult it is to ask firms for their welfare costs.

"Employee amenities" in the above table include such things as the provision of soap, towels, barrier creams, medicines and first aid equipment, social and recreational facilities, works library, company handbook, overalls and other protective clothing, suggestion scheme awards, long service awards, subsidised transport, etc. All these items, however, do not add up in most firms to a large total and the heavy cost of welfare is largely due to six main items which we will now examine individually:—

1. Holidays with pay

Since the war a second week's holiday with pay has become general throughout the country so that, including statutory holidays, most employees on the works floor are receiving at least three weeks' holiday

per year while many managerial and staff personnel receive four weeks in all. Admittedly, works personnel for the most part receive only time rates so that their holiday pay is somewhat below their normal piece work earnings. Nevertheless, it can be reasonably assumed that the grand cost of holidays is somewhere between 4 and 6 per cent and there are already indications that before long there will be trade union pressure for a further week.

2. Pension Schemes

These schemes have rapidly increased even for works personnel since the war. While most schemes are contributed to by the employee the major part of the cost is carried by the employer and if the pensions are to be worth while this can form from 3 to 8 per cent addition to the payroll. In addition to this, however, there is in commencing such schemes the problem of previous service with the firm. To create a fund to cover this can be a very heavy capital expense. It is, therefore, quite common for this large sum to be averaged out over a period of 10 to 20 years, so that a firm which has recently introduced a pension scheme and is prepared to recognise back service may be paying over 10 per cent in addition to the normal wage bill. There are, of course, still many firms who have pension schemes only for staff employees, and for them the cost is comparatively small.

3. Sick Pay Schemes

Before the war many firms encouraged their employees to organise sick and benevolent funds to which the employee contributed. Annual donations were often made by the company. Sick pay schemes, on the other hand, were comparatively rare. With increasing competition for labour more firms are introducing payment to employees who are absent sick. Benefit under these schemes may depend on service, but several firms give sick pay after only one year with the company and in some companies benefit is immediate. The length of the period during which the pay is maintained and the amount of the weekly benefit varies considerably from scheme to scheme but since most firms have something approaching 3 per cent absenteeism from sickness it will appear that this would be the maximum cost. In fact, most companies give less than full pay, deducting National Insurance benefits at the very least, so that the cost of even generous sick pay schemes will not be more than $1\frac{1}{2}$ to 2 per cent of the wage bill.

4. Canteens

A good deal is heard of the cost of canteen subsidies, and since overheads are very often not charged to the canteen, the total costs may be even higher than is realised. Averaged out, however, as a percentage of the payroll they are probably less than is often thought. A figure of .7 per cent can be quoted with some confidence. This figure excludes the cost to commercial offices of lunch vouchers which range in value up to 3s. 6d. per day. But this is not a welfare service: it is a disguised form of tax free wages.

5. National Insurance Contributions

This is a statutory charge, but should be borne in mind especially in international comparisons since other countries who have less extensive national services arrange either by law or by union contract for the firm to provide considerable assistance in the matter of medical services and sickness payments (e.g., in France, where there is such a reluctance to pay normal taxation, the firm's contribution to state insurance is far higher than in this country). The charge in Britain to the employer for women is, incidentally, heavier than for men being 4.4 per cent of the average women's wage compared with 2.7 per cent for the average man.

6. Salaries of Personnel Staff

It is very difficult to know how much of the time of a normal personnel officer and his staff is spent purely on welfare work as distinct from recruitment, training and other organisational matters. In fact, the line supervisors, if they are to be effective, must themselves spend time on the problems of their individual employees. It is quite impossible to analyse these costs. Clearly, where there is no personnel department, even more time should be spent by line supervision on welfare matters, but the cost, as also the benefit, cannot be measured.

Elastic Limits

A survey was carried out by the Industrial Welfare Society in 1953 on personnel department costs. It was summarised in the *Financial Times* on September 30, 1954. Eighteen firms gave information and the evidence was that the total cost of personnel departments and welfare ranged widely, the lowest figure being 17s. 5d. per head per annum, the highest 1,340s. 1d. per head per annum. The medium figure of 338s. assuming the average wage at that time to be £500 per annum represented a cost of 3.38 per cent of the total wage bill. It did not include holiday pay or National Insurance contributions.

In his recent "Handbook of Industrial Welfare", R. R. Hopkins quotes from a number of company annual reports. In 1949 *British Insulated Callenders Cables* and *John Thornycroft Ltd.* both quoted a figure of 4 per cent of their payroll to be expenditure in employee benefits. In 1951 *Ind Coope & Allsopp Ltd.* quoted a welfare expenditure amounting to 15.4 per cent of payroll, and *Murphy Radio Ltd.* explained that a worker drawing £6 per week derived a further 15s. per week from employee facilities, which is 12.6 per cent. The annual report and accounts of *Vauxhall Motors Ltd.* for 1953 stated that in addition to the average weekly wage of £12 2s. 2d. for hourly paid employees during that year, the expenditure of benefit schemes amounted to £102 per head or 39s. per employee per week, which is 26.7 per cent.

It will be realised that comparisons between firms are difficult to draw since they keep their accounts in different forms. Some may include bonuses as part of the wage bill, others may not. Some include the bonus as an employee benefit. Some may be unable to separate out a number of overhead costs. Few will be able to analyse the cost of the time spent by their supervisors on welfare matters. The following conclusions are certain however:—

1. That these costs are steadily increasing.
2. That pension and sick pay schemes are growing and will greatly increase the size of the total welfare benefit.
3. That many of these benefits are now being taken for granted by the employee and can scarcely any longer be classified as "welfare" if the word is to include only those things which are provided over and above what is reasonably necessary to attract an employee to a factory.

Next month Mr. Frank Woollard writes on "What the Personnel Manager Should Know About Automation".

These Simple Measures Will Reduce Fire Risks

By **R. K. TARRANT**, *Fire Prevention Officer*

Over and above fire insurance cover:—

1. *Keep your plant spick and span.*
2. *Overhaul all fire-fighting apparatus.*
3. *See that all electrical equipment is kept in good condition.*
4. *Consult the local Fire Service on your fire-fighting arrangements.*
5. *Always call the Service no matter how small the fire.*

THERE exists in many commercial and manufacturing circles a blissful belief that, provided one pays fire insurance premiums, there is nothing to be feared in having one's business damaged or destroyed by fire. Now, it may be accepted that the majority, even although insured, would not exactly welcome a fire in their premises if only because of the inconvenience it causes; very few, however, look beyond the superficial results to see just what does occur following any fire at which it is necessary for the Fire Service to use full size hose.

Insurance against losses can be had cheaply and easily. To think of fire wastage merely in terms of actual damage by fire, however, is to underestimate badly. To this must be added losses brought about by the interruption of production (for instance you cannot insure against the annoyance of hard won customers held up for delivery of goods and who may consequently take their custom elsewhere); employees are of necessity put off with consequent decrease in their purchasing power or alternatively they may take jobs elsewhere resulting in the loss of skilled operatives; productive and distributive facilities are disrupted and there will be a serious loss of efficiency due to the necessity for adopting emergency arrangements.

The Full Toll

In addition to what may be called "personal" losses, large fires have effects additional to the above, e.g., they injure, in varying degrees of seriousness according to the total loss sustained, the economic structure of the nation by:—

(i) complete and irrevocable destruction of the materials wrought, fabricated or harvested (there is no destruction as complete as by fire!)

(ii) the futile waste of labour which has gone into their rendering, construction or gathering, and

(iii) a reduction of the taxable assets available to the nation. We may have our own personal opinion on taxes but it goes without saying that no modern society can exist without them.

Fire damage, then, is by no means only a personal and private affair, and that the losses consequent thereon are beginning to assume a slightly different aspect to that held by those who believe that sufficient insurance is a complete answer to their aftermath problems.

While in no way attempting to decry the undoubted value to the community of the fire insurance organisations, their very existence presupposes them to act in the manner of an analgesic—they make it easier to bear the pain of financial loss *after* an event, e.g., they can only compensate in part after a fire has occurred. Their surveyors and inspectors are at best theorists—skilled theorists it is true, but nevertheless their knowledge of fire conditions is, by and large, limited.

What is most important, there is a complete disregard from a fire insurance point of view of measures for the protection of life or limb. This may seem, to the uninitiated, paradoxical, but it must be realised that fire insurance is strictly a business arrangement and therefore no regard is had to any measures which do not directly protect or safeguard that which is insured, i.e., property and goods. This is, after all, only reason-

The Fire Service should be called whether the blaze is large or small.

able and it would be unfair to expect it to be otherwise without special arrangements being made.

What then must we do additional to securing adequate fire insurance cover? The short answer is, not to have a fire but, as fires will occur even in the best of well-regulated businesses, it must be ensured that the procedure to be taken in the event of the discovery of an outbreak is the correct one.

Fires just don't happen—they are caused, either through thoughtlessness, carelessness or ignorance. Fires will continue to occur as long as there is human failure, improper functioning or abuse of equipment and faulty operation of processes. The problem involves the condemning of unsafe conditions, a proper supervision of the "housekeeping" (i.e., tidiness) throughout the premises, and the anticipation of emergencies by pre-planning and securing sound but simple measures of preparedness.

Those double iron fire doors which have not been closed for as long as one can remember must be overhauled and put into easy working condition and a routine established to ensure that they are closed at night. Efficient maintenance of all electrical equipment is vital to the reduction of the hazard of fire and demands frequent and thorough inspection and cleaning, periodic insulation testing, inspection and testing of earthing systems and replacement of worn and defective parts as necessary. The use of portable open-element electric fires as an auxiliary means of heating often results in a fire occurring.

Of major importance is the action to be taken upon the discovery of an outbreak. Almost without exception the answer given to the question: "What would you do if you discovered a fire?" is to the effect that an attack would be made with any appliances available.

That is NOT the first thing to be done. Essentially the first action is the sounding of an alarm, together with the immediate calling of the Fire Service. This is so important that no apology is given for reiteration of this point—the Service should be called immediately and not subsequent to any investigation to find out whether the attendance of the Service is justified. Too many small fires become large fires because it is assumed that the internal arrangements of an organisation are an effective substitute for the services of the Fire Service. Periodic and unheralded fire drill and evacuation of a factory is a wise precaution. No scheme of fire precautions can be considered satisfactory unless the procedure to be adopted in the event of fire is frequently practised.

The problem of fire prevention covers, however, such a wide scope and varies so widely according to conditions that to give adequate advice in such a short article as this is impossible. Advice is, however, available simply for the asking. Section 1 (*l*) (*f*) of the Fire Services Act lays upon a fire authority the responsibility of . . . "securing efficient arrangements for the giving, when requested, of advice in respect of buildings and other property in the area of the first authority as to fire prevention, restricting the spread of fire and means of escape in case of fire".

Therefore, to anyone interested in protecting their organisation against the losses occasioned by fire, it is suggested that they apply to their county or county borough authority for the services of a Fire Prevention Officer. He will visit the premises, make a comprehensive survey of the premises and submit a report together with recommendations for improving the fire precautionary arrangements. In the majority of cases there is no charge for the advice given and if a charge is made it is limited to a matter of shillings.

Keep a Figure Check on Safety Progress

By HENRY ALLEN

Here is a simple, practical guide on how to compute accident statistics. Such figures should always be kept up to date. Then, says the author, they provide a valuable means of checking safety progress.

ACCIDENT prevention is one field about which there is uniform agreement on the value of statistics. It is essential to know precisely what kind of accidents are happening, where these are happening and to what persons and with what kind of machines or equipment; also how often and how severely.

Only by accurately recording such data can managements find out where the hazards are, how often these result in actual injury, how much lost time they cause and whether any other costs (such as common law claims) are involved. Most important, statistics point to where safety measures need to be reviewed, while a comparison of a company's accident rates with those of other firms in similar industries is, to say the least, illuminating.

For this reason, if for no other, a standard system of computing accident statistics is essential and, of course, such a standard is available. A statistical system was originally devised by the International Labour Office and in the light of experience has since been modified by the industrial section of the Royal Society for the Prevention of Accidents, which is the ex cathedra source for the present standard in this country.

Two formulae are used in the system. One gives the Frequency Rate, the other the Mean Duration which has now replaced the old Severity Rate. The Frequency Rate is calculated as follows:—

$$\text{F.R.} = \frac{\text{No. of lost time accidents} \times 100{,}000}{\text{Man hours worked}}$$

The Mean Duration is calculated as follows:—

$$\text{M.D.} = \frac{\text{Total man hours lost}}{\text{Total No. of lost time accidents}}$$

In computing Mean Duration, fatalities are excluded both from the numerator and denominator.

The factors appearing in these formulae perhaps require some elucidation:—

Man hours worked. Includes all time, including overtime, worked by employees except office staff and foremen. It does not mean "standard" hours or average hours or optimum hours, but the actual time worked. It is important to make this point clear because most factories have a basic working week and that figure

sometimes appears in other statistical data.

Lost time accidents. These are accidents which result in injury and disability of a kind which prevents the injured employee from continuing normal employment beyond the day or shift on which the accident occurred. Transfers to other work are included and the unit is the injured person.

Man hours lost. Includes the actual hours lost, including the overtime hours, by the injured employees during the period under review. The lost time of those fatally injured is not chargeable.

The two formulae can be used not only to show the accident rates for the factory as a whole, but also in determining those for the various departments. The information thus revealed is important to everyone concerned. It is also important as a means of tabulating the results shown in the rates in the form of a league table, a safety promotion stunt that can inspire keen rivalry among departments for a most worthy purpose. Departments can note their position in the table week by week and safety consciousness will thus be more alert and accident prevention codes more scrupulously observed. Showmanship in safety is not to be despised. The general purpose behind compiling accurate accident prevention statistics is, of course, fully justified. Such a barometer instantly points to where investigation is needed and where more detailed safe working techniques are desirable.

Using these nationally accepted formulae, the safety officer or personnel manager can go further ahead. Three useful breakdowns are:—

age, the data often indicate a need for more training for young employees in safe working;

sex, revealing that women may have been placed on jobs with specific hazards such as lifting heavy weights; and

jobs, potentially important since the statistics may underline certain job hazards that are insufficiently anticipated or inadequately blanketed in the company's safety policy.

One point needs to be stressed, namely that accident statistics must be kept absolutely up to date. A time lag neutralises their value. But meticulously kept, they provide the officials responsible for safe working in the factory not only with the existing position but with a true record of any progress being made in reducing accidents.

SAFETY NEWS AND VIEWS

A 'Safe' Office Job

WITH its arresting title and front cover, as shown in our illustration, the booklet recently published by the Royal Society for the Prevention of Accidents is believed to be the first publication of its kind in the world. Its aim is to impress upon the office worker that he, no less than the factory employee, is beset by dangers during the course of his daily work; indeed, because office hazards are not always obvious, they may present even greater risks. Examples are the trailing lamp wire, the open drawer of the filing cabinet and the careless smoker. Engagingly written and illustrated, it should appeal to all grades of

office staff and do much to reduce unnecessary accidents.

Copies of "Danger!—Office Staff at Work" can be obtained from RoSPA, Terminal House, 52 Grosvenor Gardens, London, S.W.1, at 6d. per single copy, 5s. 6d. for 12, 10s. 6d. for 25, 20s. 6d. for 50 and 37s. 6d. for 100 copies.

New Regulations

THE Minister of Labour and National Service, Mr. Iain Macleod, proposes to make new Special Regulations for the fencing of abrasive wheels in factories and other works covered by the Factories Acts.

The proposed Regulations will lay down standards of fencing of abrasive wheels modifying the existing statutory provisions for the secure fencing of dangerous parts of machinery.*

The Minister published notices of his proposal in the London and Edinburgh Gazettes on March 27. Copies of the draft Regulations, which are called "The Fencing of Abrasive Wheels Special Regulations, 1956", may be obtained from H.M. Stationery Office (price 2d.).

Any objections to the draft Regulations by or on behalf of persons affected must be sent to the Minister on or before May 7, 1956. Any objection must be in writing and must state the specific grounds of objection and the omissions, additions or modifications asked for. Objections may be addressed to the Secretary, Ministry of Labour and National Service, 19 St. James's Square, London, S.W.1.

* The existing provisions are Section 14 (1) Factories Act, 1937, and Regulation 85, Building (Safety, Health and Welfare) Regulations, 1948, both of which require that dangerous parts of machinery shall be securely fenced.

Building Toll Up

THE annual report of the National Federation of Building Trades Employers quotes an increase in accidents on building sites from 9,649 in 1948 to 13,903 in 1954 and the rate per thousand employed rose from 11.4 in 1948 to 17.1 in 1953. The Federation's Building Regulations and Welfare Committee is examining a number of steps to stimulate a greater degree of safety-consciousness among the general body of builders. The Committee has emphasised particularly the value of training in safety measures for general foremen, apprentices and younger operatives generally, and suggested that the necessary provisions should be included in the National Apprenticeship Scheme.

Three E's

"INDUSTRY to-day", said Major-General B. K. Young, RoSPA's Director General recently, "is becoming less and less a technical problem and more and more a human problem. As in every field of accident prevention, the cure lies in the three E's.

"These are Education of all from highest management down to the newest joined youngster; Engineering which can produce a machine that is adequately guarded; and Enforcement which ensures that lessons learned through training are always put into practice."

Safety à la Mode

THE RoSPA National Industrial Safety Conference and Trade Exhibition will be held as usual at Scarborough from May 11 to 13. It is hoped that the Minister of Labour and National Service, the Right Hon. Iain Macleod, M.P., will give the opening address. Other papers reflect the problems of industrial safety in this modern age. One, for instance, deals with Safety Precautions in the Use of Radio-Active Isotopes, while another will cover the use of Electronics for Safety Devices. Some 45 well-known makers of safety equipment will be taking part in the Trade Exhibition.

F. W. Taylor, whose centenary occurs this month, is thought of the world over as "the father of scientific management". His life spanned the hectic early years of America's industrial revolution and was dedicated to making the most of what Nature had provided and to improving the lot of the workpeople. More clearly than his contemporaries he saw that if one wills better management one must devise the means.

F. W. TAYLOR:
"A whale of a New England conscience."

F. W. Taylor's Centenary

The Father of Scientific Management

By THE EDITOR

ONE hundred years ago this month into one of Philadelphia's numerous Quaker families was born Frederick Winslow Taylor, the man who is generally credited to be the founder of modern management. Taylor himself insisted on more than one occasion that the raising of management to the status of a science had been the work of "100 men or more". Nevertheless his tomb at Germantown, near his birthplace, bears the inscription: "The Father of Scientific Management", a title bestowed by his own disciples but since approved by management circles the world over. Indeed, some idea of the extent of Taylor's influence can be gleaned from the fact that even Lenin as early as 1918 was urging Russian industry "to try out every scientific and progressive suggestion of the Taylor system".

To understand why Taylor rose to such eminence, one must consider his background and times. He grew up in a period when two distinct groups were forging the destiny of the United States. On the one hand was the brash, ruthless business adventurer, a man often as courageous as he was unscrupulous, prepared to try anything and ready to exploit anyone—a buccaneer of commerce, determined to make his pile and make it quickly. On the other hand was the Puritan man of commerce, equally strong and anxious to succeed in business, but imbued not only with religious zeal but with a sense of social justice and duty.

Taylor came from the latter group; indeed it was said of him that he possessed a "whale of a New England conscience". Nor surprisingly, along with his burning sense of duty went a personal austerity that not only guaranteed the usual prohibitions on drink and tobacco but even regarded coffee and tea as stimulants to be avoided. Taylor's father was one of the mildest and retiring of men, but from his mother he inherited a lively intellectual curiosity and strong personality. It was probably from her side too that he got his aptitude for mechanical invention. In fact he could have carved out a brilliant career in this field alone—no less than 40 technical patents stand to his name—but his "New England whale" would have regarded this as a form of self-indulgence.

Taylor came to maturity at a time when America's frontiers were being rolled back and the resources with which Nature has so prodigally endowed her opened up and exploited. Vast fortunes were being made, business was becoming a religion with success its high-priest, but business management itself was still very much a hit-and-miss, learn-as-you-go affair. There had been little or no attempt to weld it into a coherent and efficient activity backed by a set of objective standards. Thus, despite the prevailing prosperity, America was not producing with anything like its now celebrated efficiency. Moreover, wages were low and often inadequate and a source of constant friction between management and labour. Industry was ripe for discipline and guidance.

Into this world came Taylor—paradoxically—by chance. He had intended to study law but temporary eye trouble forced him to renounce this and he turned to engineering. In 1875 he was apprenticed in the *Enterprise Hydraulic Works*, a small machine shop in Philadelphia, to the trades of pattern maker and machinist. Thereafter until he retired from in-

dustry proper in 1901 to become an unpaid consultant and lecturer—"I can no longer afford to work for money", he said—Taylor's career was one of uninterrupted (almost foreordained, one feels) progress.

In 1878 Taylor joined the *Midvale Steel Works* in Philadelphia as a machine shop labourer. He rose successively to shop-clerk, machinist, gang-boss, foreman, maintenance foreman, head of the drawing office and chief engineer, having obtained a degree in engineering through evening study. In 1890 he became general manager of the *Manufacturing Investment Co.*, makers of paper fibre. The five years from 1893 to 1898 saw him as a consulting engineer in management advising some of the biggest names in U.S. industry. In this period, also by private study, he mastered accountancy. From 1898 to 1901 Taylor was with the *Bethlehem Steel Company* where he and White made the discoveries leading to the development of high-speed tool steel first demonstrated at the Paris Exposition of 1900. From 1901 until his death in March, 1915, Taylor devoted his energies to furthering the cause of scientific management in the United States and abroad.

So much for the milestones in his life, but what of his most important achievement? What was this "Scientific Management" which was to build up his great reputation?

When Taylor began in industry efforts had already been made on both sides of the Atlantic to bring engineering and accountancy—then the two principal elements in factory management—more closely together. Here and there some interest had also been shown in labour incentive schemes and production control. But these matters were still in their infancy until Taylor thought right through the whole cycle beginning with the basic process carried out by a single worker at a given moment in time.

It began at the *Midvale Steel Works*. Here Taylor was anxious to end the practice of restriction of output by the workers for whom he was responsible. He knew from his own experience as a lathe operator that much higher outputs were possible without unreasonable effort. He decided that the fault lay in the ignorance of both sides. Management demanded and the workers were willing to give "a fair day's work for a fair day's pay", but neither side had any idea of the true quantity involved in "a fair day's work". Both were judging on vague impressions and traditions and this led to never-ending disputes.

HOW TAYLOR SAW 'SCIENTIFIC MANAGEMENT'

"It is not an efficiency device . . . It is not a new system of figuring costs . . . It is not holding a stop-watch on a man . . . it is not time study nor motion study . . . it is not functional foremanship . . . it is not any of the devices the average man calls to mind when Scientific Management is spoken of. In its essence Scientific Management involves a complete mental revolution on the part of the working man engaged in any industry and it involves an equally complete revolution on the part of those on management's side."

Taylor solved this problem through exact and detailed measurements of the movements used on every process and by the reorganisation of jobs and systems of payment in the light of his discoveries. Such work logically led to other developments in planning, in the flow of materials and jobs, in tool supply and so on. Thus it was not only possible to set up valid "standard" times but to enable workers to achieve "standard" or better.

A Philosophy Is Born

In the years that followed, by elaborating techniques for analysing and measuring elementary processes, Taylor arrived at a new philosophy of management based on ideas that were at one and the same time proved, objective and practical. "Scientific Management" as this new body of knowledge came to be known, rested on two main principles. These were:

"both sides (management and men) must take their eyes off the division of the surplus as the all-important matter, and together turn their attention towards increasing the size of the surplus."

and

"both sides must recognise as essential the substitution of exact scientific investigation and knowledge for the old individual judgment or opinion, either of the workman or the boss, in all matters relating to the work done in the establishment."

These principles have a familiar and necessary echo today.

It was, to use Taylor's own words: "a mental revolution". For the first time it had been shown beyond all trace of doubt that a good and efficient business was a venture in human co-operation in which all concerned must have a common purpose and a common method. Taylor himself was convinced that these principles were his real contribution to the world and from 1902 he devoted the rest of his life to advocating them as widely as possible.

It is the fate of every man who is ahead of his time to be misunderstood and falsely accused. Taylor was no exception. Because he was necessarily preoccupied with sorting out the mechanics of work processes, he was attacked for not being sufficiently concerned with the "dynamics" of management, that is to say with inspiring and energising the people who carried out these mechanics. Nothing of course was further from the truth as was proved not only by his writings but by the example he set on the shop floor itself. There was never a strike where Taylor was in charge.

True, Taylor was not the type of man to indulge in mawkish sentiment over the workers, but the fact remains that he devoted his life to their service and betterment. But he was no day-dreamer and was acutely aware that fine words butter no parsnips. He saw much more clearly than his contemporaries that if one wills humane management one must also will the means. He was as democratic in spirit as in thought which was the reason for his impassioned outburst in 1912 when stung by criticism from a Congress Committee:

"Scientific management", he pointed out, "is not an efficiency device, nor is it any bunch or group of efficiency devices; it is not a new system of figuring costs; it is not holding a stop-watch on a man, and writing things down about him; it is not time study; it is not motion study; it is not the printing and ruling and unloading of a ton or two of blanks by a set of men saying: 'Here's your system, go to it'; it is not divided foremanship, or functional foremanship; it is not any of the devices which the average man calls to mind when Scientific Management is spoken of. Now, in its essence, Scientific Management involves a complete mental revolution on the part of the working man engaged in any industry, and it involves an equally complete revolution on the part of those on the management's side—the foreman, the superintendent, the owner, the board of directors, and without this complete mental revolution on both sides Scientific Management does not exist."

And, almost by way of a footnote, it is interesting to note that Taylor had no doubt that the foreman was, or should be, part of the management team. Some 40 years after his death our modern experts are still trying to get managements to accept this.

PEOPLE AT WORK

Work Study for Shops

"AN Investigation Into Operating Methods in the Hardware Department of a Store" is the title of a report just published by the Department of Scientific and Industrial Research in response to a request by the Retail Distributor's Association. They make nine main recommendations, which are as follows:—

1. Staple lines of repeatable merchandise should be segregated from "short-term" items, such as novelty lines, special price offers, etc., and the purchasing ration should be split between these two groups.

2. An "ideal stock" of the staple lines should be planned to give the best permanent assortment that the proposed investment and the available space will allow.

3. These staple lines should be displayed by sample in groups of like articles near eye level on the selling fixtures and (if possible) with forward stocks beneath ready packed.

4. The "short-term" lines may be displayed by bulk promotional displays and by demonstration.

5. The price tickets for the staple lines in each group should each be one of a series to make it easy for customers to compare and pre-select.

6. Large items that cannot be carried away should be shown by sample only and delivered direct from reserve stocks or warehouse.

7. The layout of the department in relation to the stockroom, the buyer's office, etc., should be so planned as to reduce to the absolute minimum the necessity for sales assistants to leave the selling area.

8. For the same reason, and to provide constant supervision, an under manager with the power to give authorising signatures in as many cases as possible should be sited in the department itself.

9. Store procedures which necessitate long journeys, or considerable absences by the selling staff from their departments, should be re-examined.

Self-Help

WHEN the miners at a colliery near Blaenavon, South Wales, started contributing to the National Coal Board welfare scheme, their own local welfare fund was wound up and provided a surplus balance. After contributions to local charities and the purchase of a television set for the local hospital, the miners decided to boost their own output by buying a public address system for the pit-head baths and adjacent canteen. Over this system the manager of the baths is able to issue instructions and give details of production figures achieved. Music is also broadcast throughout the baths and canteen.

Words! Words! Words!

THE average business executive spends eighty to ninety per cent of his time communicating, Frank E. Fischer, director of the American Management Association's Course in Executive Communication, estimates in "Effective Communication on the Job", a handbook on face-to-face communication in industry just published by the association.

Communication—trying to understand someone or trying to make him understand us—is the "x factor" that means the difference between success and mediocrity in the manager's job, according to Mr. Fischer. "It is perhaps the highest, the most exacting skill of management. Possibly it is also the most neglected."

Management is estimated to spend more than $112 million a year on publications in the field of communication alone, Mr. Fischer reports. Yet "all the talk, the activity, and the prescriptions have failed to build a bridge between labour and management, between superior and subordinate". We are foundering because we mistake the form of communication for its substance, we oversimplify, we talk too much and listen too little.

Too many executives, Mr. Fischer charges, see communication as a gimmick, to be taken off the peg and used as needed. Too few see it as "the heart of all business and industrial operations, the most important tool we have for getting things done".

Good communication, Mr. Fischer emphasises, is good business. "In today's highly competitive situation, a business may stand or fall on the basis of its productivity. And productivity depends more and more on effective teamwork—on a sense of participation shared by all who work for the company. What counts, in the final analysis, is not what people are told but what they accept. It is this concept of communication that characterises effective leadership."

White Collar Survey

THE Office Management Association made a further survey on March 1 into the rates of pay of office staff. The information collected will be analysed for individual areas and individual industries, apart from the main tables which will give the rates throughout the whole country and in all industries.

This will be the seventh Clerical Salaries Analysis which the Association has made; the first took place in 1942.

The aim this year is to make the analysis even more representative and a sample of 100,000 clerks is the target of the Association. In 1954, information was supplied by nearly 850 firms employing 70,000 clerks which showed a 25 per cent increase over the number of clerks covered in the previous analysis.

'To Stand and Stare . . .'

AMERICAN trade union leaders have foreshadowed a 30-hour working week to maintain full employment in industry as more and more factories turn to automation and atomic power. Mr. George Meany, head of the newly-merged American Federation of Labour and the Congress of Industrial Organisations, has said that the 30-hour week will be necessary to provide enough jobs in the industry of the future. This would also, he said, permit more time for "recreation, education and the general pursuit of happiness."

Mr. Meany has warned labour that it must guard against the possibility that this new industrial age will break down the conditions of life and work which wage earners have achieved in the past. While insisting that labour will not resist industrial progress, he maintains that unions must greatly expand their training and re-training programmes to teach their members the latest mechanical and electronic processes.

"Although Milkins joined us fifty years ago, I've been totting up time lost through being late every day and find he's only been with us just over forty-nine—however . . . !" *(David Brown Newsletter)*

"If Men Worked as Hard as Women . . ."

MR. CYRIL OSBORNE, Conservative M.P. for Louth, said at the annual dinner of the Leicester Textile Society recently: "If the men of England worked as hard as the women there would be no economic crisis.

"If wives got the same proportion of the wage packet as pre-war there would be much less inflation, for pre-war men's wages averaged 71s., and today they average 230s.

"Too many married women are being asked to help with factory work in addition to doing a full day's housework in order that men may enjoy a shorter working week.

"It is a pity the women cannot drive their menfolk back to work on Saturday mornings. The men have no right to put so much work on women's shoulders. If they treated the women fairly, half our economic troubles would be ended."

Reciprocal Benefits

AN agreement on social security between the United Kingdom and New Zealand came into operation on April 1. As from that date, people in this country are able to draw National Insurance benefits by virtue of their residence in New Zealand. Anyone who wishes to make enquiries about the agreement should apply to a local office of the Ministry of Pensions and National Insurance.

More Italian Labour

LAST year 2,320 Italian workers were recruited for essential industries and services in Great Britain.

This was done under facilities offered by the Ministry of Labour and National Service for the bulk recruitment of Italian workers at the employers' expense.

The industries and services mainly concerned were brickmaking, tinplate, iron and steel, chemicals and hospitals.

The first group of Italians recruited under similar arrangements came to this country in 1950 since when over 11,000 Italians have taken up employment here. Arrangements for the recruitment of another thousand are in hand, and there is every indication that demands for Italians during 1956 will again be substantial.

Subscribers show interest at this journal's stand at the recent Factory Equipment Exhibition at Earl's Court.

Rehabilitation

A SHEFFIELD steel firm has started a scheme by which employees recovering from illness or injury and in need of rehabilitation may make industrial gloves. The firm, *Steel, Peech and Tozer*, a subsidiary of *United Steel Companies Ltd.*, will in this way supply between 20,000 and 30,000 pairs of industrial gloves a year towards the 100,000 used by the parent company.

Aiding the Blind

THE Loughborough hosiery machinery firm *William Cotton Ltd.* has introduced an instrument—the first of its kind in the country—which can be used by blind people. It is an audible comparator which enables blind operators to segregate components into oversize, undersize and correct groups working to one-thousandth of an inch. A ringing note indicates that the component is the correct size. The instrument is being referred to the Ministry of Labour with a view to its being adopted in other industries.

HOUSE MAGAZINE DIGEST . . .

Other Firms' News And Views

Publicity Values

MR. VENABLES referred to the need for maintaining morale in industry and drew a parallel with his Army experience over 15 years full-time and part-time service. General Montgomery, he said, believed that a soldier fought better when he knew why he was fighting, and what his part was going to be. In North Africa, during the last war, Montgomery introduced a newspaper and was reported to have said once that it was worth a division of troops. Similarly, journalists could contribute something to industry by establishing methods of communication between management and operatives, said Mr. Venables. **(Thorncliffe News.)**

New Thinking Required

Let's . . . turn our attention to all the things we do, in commerce, in industry and in our very homes. Up to the war years we could apply the adage "second to none" to a great number of our activities. We were tops in a lot of things. But the world has changed a great deal since then. In spite of this many people are still riding on that early success wave, which carried us for a long time remember, and still try to apply the title today. Unfortunately it does not fit any more and worse still we seem to be the last people to realise it. **(Fathom.)**

Discipline or Trust?

I do not think we should become too formal. A great deal can be accomplished by day-to-day informal discussions. If we build up an atmosphere of mutual trust between the workpeople and the management through these meetings then many difficult situations would not arise and the need for discipline would not exist. Discipline was a restriction of liberty which most of us did not like but which was necessary. "But we must also keep in mind", he (J. W. Atwell, Works Director) said, "that real discipline has no exemptions; it applies to all levels and grades of industry." He then stressed that, as leaders and supervisors, they had to accept a higher degree of responsibility and a stricter standard of self-discipline. Improving the human relationship was the only thing they could do to give the men in the shops the same kind of self-discipline. **(The Weir Bulletin.)**

The Lure of Comfort

We had to-day the welfare state, and there was also much attention to welfare by individual firms in industry. All this was magnificent and excellent, and no one would wish to put the clock back. But there was a danger in having too much done for us. "I think that the lure of comfort is something we have got to battle against. We want men who are able and willing to think for themselves. Men who are not afraid to stand up for their own ideas." **(Circuit).**

Hard Hitting Memos

Sir,—
Must you write that Memorandum?
Won't a message do instead?
Don't rush into print at random;
Must you write that Memorandum?
Some progressive firms have banned 'em
And their profits shoot ahead—
Must you write that Memorandum?
Won't a message do instead?

("Always put it down in writing":
We remember we have heard
Those who know the ropes reciting
"Make your meaning plain in writing
"Lest they say they have not heard."
Though "a message" is inviting
Can we trust the spoken word?)—Ed.

(John Lewis Gazette.)

Hotelympia Shows Way to Easier and Cleaner Catering

A host of new equipment and gadgets to take the drudgery out of catering were on show at Hotelympia this year. This review covers a number of the most interesting developments—from basic cooking to dishwashing and storage—all of which point to a new and higher standard of canteen hygiene and efficiency.

SPARKLING aluminium seemed to be the keynote of catering equipment manufacturers when they exhibited their latest wares at HOTELYMPIA last month. Simple, streamlined exteriors covered a complexity of operations in an attempt to achieve greater safety, hygiene and ease of work for all connected with food preparation and service.

The emphasis seemed to be on basic drinking habits—those of tea and coffee. Everyone rivalled each other on the quality of tea or coffee produced by their equipment. *Expresso* machines appeared in abundance with varied refinements. The first all-British equipment of this sort made its appearance. Making a continental type coffee at approximately 2d. per cup (including milk and service) the *Connoisseur* can make one cup every 20 seconds from each infuser. The unit itself is small but it can be arranged to work in conjunction with the *Connoisseur Café Set*, making a combined unit to cater for all beverage requirements. In this way one or two gallons can be made for peak periods, milk warmed in bulk and tea made from the large quantities of boiling water always available. (Ref. A.)

Another new coffee maker for an even cheaper cup of coffee is the *Filtesso* (Ref. B), suitable for coffee bars in canteens away from the main serving counter. On the other hand the well-known *Cona* coffee maker (Ref. C) has for many years been adapted for use in large scale canteens and restaurants, and with the same good results. Recently, however, it has been discovered that the *Cona* is equally suitable for tea making.

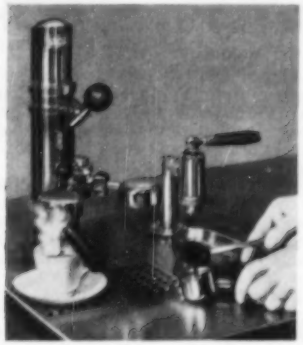
Designed to make tea in bulk the *Teamaka* is an entirely new piece of equipment. This is a simple, sound,

By SHIRLEY MEREDEEN

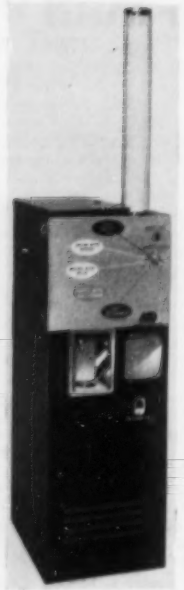
workmanlike piece of equipment, made entirely of stainless steel, which boils the water, makes the tea automatically, stores it hot and adds milk when serving into the cup. A special service valve will give tea with or without milk as required at the rate of sixty cups in five minutes. Infusion is by a continuous flow of boiling water passing through the leaf for a fixed period of time and an alarm whistle is blown when infusion is complete. Tea cannot be made with other than boiling water and it is never stewed. (Ref. D.)

Another newly evolved method of brewing is used on the *Still's Brewer* which ensures maximum extraction and uniformity of strength. Only three to four ounces of leaf are required to produce four gallons of good quality tea free from any loose leaves. To prevent any chance of tainting, all metallic parts in contact with tea are made of, or plated with, pure silver. This *Brewer* consists of a container holding four gallons, complete with silvered metal strainers, the tea being brewed in the container under pressure, this taking approximately six minutes. By a movement of the control lever, tea is transferred, again under pressure, to the steam heated *Pyrex* glass-lined storage urn where it may be retained at service temperature for several hours. It has an hourly output of sixteen gallons. (Ref. E.)

Those who still prefer to make tea in pots have not been forgotten in the multitude of equipment designed for larger scale feeding. The *Quicksave* is a tea dispenser which automatically reduces the proportion of tea dispensed to the increase in number of people served. The portion dispensers are adjustable and, once set, ensure uniform strength of tea every time. Reducing the time taken to dispense tea, the separate dispensers for single, double, triple and quadruple serves enable the caterer's



Although there is constant demand in canteens for tea and coffee, customers are quick to criticise poor quality and high prices. With the wide range of equipment shown at HOTELYMPIA there would appear to be no excuse for serving anything less than top quality beverages at reasonable prices. The tea dispenser (*left*) ensures equal measures for teapot users, the Express unit (*centre*) supplies a Continental type coffee at 2d. per cup while the Brewer (*right*) is for large scale caterers supplying tea to customers who want "a really good cup of tea."



Kwik-Kafe Vending Machine.

assistant, with only one operation, to prepare a teapot for four as quickly as for one. (Ref. F.)

For the more progressive firms who want to avoid breaks in production and follow the custom of our American friends, vending machines bring refreshments to the factory or office floor. By inserting sixpence and turning a pointer the *Kwik-Kafe* will provide coffee, with or without sugar, with or without milk, or hot chocolate in a waxed paper cup. The coffee is freshly brewed and the milk is fresh, and all the ingredients are refrigerated until the moment of serving, when they are mixed with near-boiling water. With a capacity of 150 cups the *Kwik-Kafe* takes 10 minutes to refill. (Ref. G.)

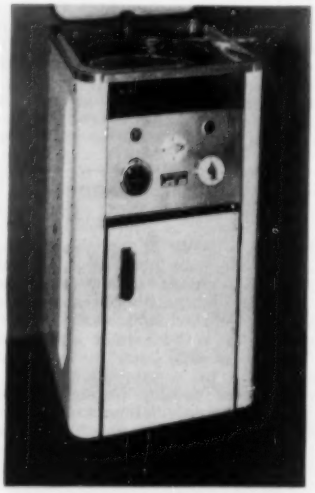
Food Preparation

Leaving liquid refreshment and turning to basic food preparation we noticed a revolutionary oven which roasts with Infra heat and steams at 30 lb. pressure called the *Ovenator*. It is said to reduce fuel bills by a quarter, reduce meat shrinkage and cut cooking times. In this oven vegetables and puddings can be steamed, meat, fish and poultry steamed and/or roasted, cakes and bread baked at temperatures of up to 900°F. Fifty pounds of meat and 70 lb. of root vegetables can be cooked at one time and, because of the fast cooking times, the area required for cooking equipment can be reduced by approximately 50 per cent. When the oven is cooking the door is sealed and no steam or aroma escapes. This is due to the fact that all steam is extracted and piped out of the kitchen before the door is opened. (Ref. H.)

A completely redesigned range of kitchen equipment has been manufactured by one firm with particular regard to the new Hygiene Regulations. Constructed in stainless steel with an outer satin finish, the gas or electric heated boiling pans have a thermo-electric flame failure device. The method of heating is unique as there is no direct flame on to the pan, and the heat is distributed evenly over the whole pan base irrespective of whether the burner is "full on" or turned down for simmering. (Ref. I.)

Limitations of space and money are frequent troubles of all caterers. As gadgets of all types flood the market the *Adastra* composite snack bar unit which combines gas burners, griddle plates, hot cupboard, griller and toaster and deep frying range should be welcomed by small canteens. Made of welded steel framework, the casing, work top, shelves and back screen are of aluminium or stainless steel. The effective working area of the griddle plate is 18 in. back to front, and 10 in. wide. The top of the griller is fitted with a vitreous enamelled grating upon which additional plates can be heated or cooked dishes kept warm. The frying range incorporates a low temperature sediment trough and thermostat control. All types of meals can be prepared on the one unit. (Ref. J.)

Frying oil costs are said to be reduced by 40 per cent to 50 per cent by the use of the new *Valentine* automatic electric fryer. It can heat cold oil up to cooking



Valentine Electric Fryer.

temperature in four minutes and cannot make the oil smoke or burn. The temperature is automatically controlled and a signal bell warns when the food is cooked. (Ref. K).

The frying pan is stainless steel with an overflow pipe and the dregs automatically filter through to the waste receptacle in the lower part of the cabinet. Easy to clean, it has a built-in switchboard and can fry foods at high speed. Fish, vegetables, meats, fruits, onions cooked in the same oil at the same time have no transfer of taste. Time, labour, oil and costs are, therefore, reduced.

The new *Peerless* bench mixer has been specially designed for the medium-sized establishment where a mixer must be as hard-working and versatile as the biggest, yet must not take up too much room. With a bowl capacity of 30 quarts this will mix anything that is handled by the largest mixers, yet it operates on a bench and stands less than three feet in height. With pressed steel bowl and ½ h.p. electric motor, the *Q*.30 should last a lifetime. (Ref. L.)

Where constant quality by accurate measurements of ingredients is needed the new scales, nicknamed the *Lighthouse*,

Lighthouse Scales.

will be welcomed. They have a 20 lb. capacity and, although particularly suitable for repetition factory weighing, they can be used by all catering establishments. Self-levelling and semi-automatic the extreme sensitivity of the level-proof mechanism make it an ideal machine for pre-packaging. The chart can be read from any angle, and the large divisions into which the visible weight range is divided considerably reduce operation strain. (Ref. M.)

The drudgery has been even further taken out of washing-up by the introduction of several new type dishwashing machines. One is the new Swiss *Wefco*. All electric and fully automatic, it is suitable for small and medium catering establishments by dealing with the

(*Continued on page 557*)

Wefco Dishwasher

The nine companies comprising

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5 EAST CIRCUS STREET, **NOTTINGHAM** · PHOENIX CHAMBERS, SOUTH PARADE, **LEEDS**, 1
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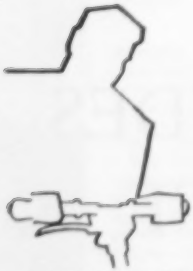

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Individuals on tour in the factory and wanted in a hurry are quickly found by Rediffusion Staff Location systems.

Policy announcements and other encouragements, broadcast by a familiar voice, possess the personal touch that makes happy staff relationships.

Enquire how Rediffusion can save time and help to solve labour and production problems in your factory. This entails no obligation, just as its installation entails no capital outlay.

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New Industrial Equipment

EXECUTIVES' SURVEY OF AIDS TO INCREASED PRODUCTION

Readers who wish to know the suppliers of any of the products referred to in this section are asked to write to the Editor, quoting the reference number which appears at the end of the paragraph. We are always glad to consider for publication descriptions — preferably accompanied by an illustration suitable for reproduction — of new products.

Safety

SEAMLESS SHOES

PRODUCED in one single moulding these new seamless shoes will not crease, lose shape or develop cracks. They are fully resistant to oils, acids, grease, etc., are fitted with moisture-absorbing Viscovita insoles and, at the same time, are neat and trim in appearance. Ventilation grooves are provided on the inside of the shoes, thereby keeping them cool and fresh to the

wearer, even under conditions of extreme heat.

Made of Noroplast, a new material in the nylon family, the shoes do not at any time require polishing. Non-porous, non-marking, the shoes are easy to clean and need only be rinsed out in warm water, both inside and out. Drying is automatic. Because of the waffles moulded in the sole and heel, the shoe will not slip or slide on greasy surfaces. A build-in arch support is an additional advantage for operatives whose work entails a great deal of walking or standing for long periods. **(PM/1074.)**

FIRE SUFFOCATER

A NEW lightning fire fighter uses a remarkable extinguishing agent which instantaneously suffocates fire the moment it is applied. The dry chemical flows as easily as a fluid and does not "cake" within the container; it does not deteriorate; it is harmless, being non-toxic, non-abrasive and non-corrosive; it is unaffected by extremes of temperature; it may be used with safety against electrical outbreaks and fires involving highly-inflammable liquids.

It acts so quickly that frequently only partial discharge is necessary. Its simple operation enables the unskilled operator to use this model effectively with little or no training and saves valuable seconds in attacking the fire. The extinguisher can be recharged on the spot within a few minutes. **(PM/1075.)**

ROPE SECURERS

THESE terminals have been designed to fit any known specification of wire rope. They are compact assemblies of three simple units which, when assembled, form a terminal locking the wire rope to the assembly to form a connection which cannot come apart.

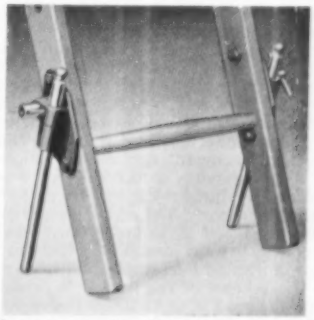
Advantages claimed for the terminals are simplicity, speed, strength and economy. The simplicity enables unskilled labour using a hammer, vice and

spanner to effect a permanent attachment. The speed means the operation can be done in a few minutes, while the strength of the resulting attachment exceeds the strength of the wire rope and will withstand any hammering or vibration.

No heating of metal, welding or brazing is used and once fastened the makers claim the terminal is absolutely secure. An inspection hole is provided to ensure that the attachment is securely fastened, and plug inserts are provided for different types of wire rope. **(PM/1076.)**

LADDER FIXER

LADDER work need no longer be dangerous with the aid of a new, simple but effective, device called the "Fixfoot". Easily attached it prevents the ladder from slipping and is perfectly



safe even on greasy floors. The reversible ends (point and ferrule) make the adaptor suitable for use on slab, tiled, tarmac, wood or any flat hard-surfaced floor. **(PM/1077.)**

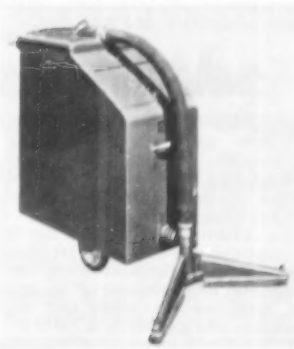
Good Housekeeping

VERSATILE PAINT

FACTRON rubberised paint can be sprayed or brushed on to exterior or interior floors of linoleum-covered, concrete or wood floors. When applying it to concrete no neutralising treatment is necessary. Following a two-coat application in one of eight colours the surface can be washed or polished. **(PM/1078.)**

CLEAN-WHILE-U-WORK

AN attachment to an existing cleaning machine enables dust and dirt to be removed from large-area floors and



gangways without interference with production. An adjustable slide incorporated in the tool allows the removal of factory debris without raising any dust. The new attachment is made in three standard widths of 18 in., 24 in. and 30 in. For extra-large areas there is a 50 in. width.

(PM/1079.)

DUST REMOVER

THE purpose of the *Hydro-Clean* is to handle the extremely fine dust produced by cutting with the abrasive wheel of its companion, the *Westbury*. The abrasive wheel is designed for high speed and accurate cutting of all kinds of synthetic resin paper and fabric boards, loaded ebonite, bituminous loaded asbestos and similar materials.

Some of the dust produced in cutting these is inflammable, others give off obnoxious fumes, whilst some materials are very abrasive, so that a conventional exhaust system would not be satisfactory. The dust collecting unit is of fabricated sheet metal construction and is connected to the machine by a tube through which the dust is drawn by a fan driven by an enclosed motor. The dust impinges on a chute designed to form a series of weirs over which water cascades. The dust is thus converted into sludge and is carried to the bottom of the sump. A wheeled tank is supplied to facilitate the removal of this waste. A connection is provided at the top of the unit to which an outlet to the atmosphere may be attached, so that objectionable fumes can be dispersed.

(PM/1080.)

NON-SLIP FLOORS

A NEW floor treatment solves the problems of maintenance, not only where there is constant traffic but also for large uncovered areas. One application of the product, called *Gleem*, gives a non-slip and hygienic surface which will last for many months without renewal. When retreatment is required, it is necessary only for worn parts of the floor and can be carried out in a few minutes.

The smooth, hard surface can be walked on within an hour of application. It is resistant to grease and stains can be quickly wiped off without leaving any trace. Treatment can be applied, by cloth or brush, to almost any floor, including quarry tiles, wood, parquet, most types of good linoleum, concrete, cement, pitchmastic and brick.

(PM/1081.)

Handling

POWERED TUG

A NEW addition to the range of materials handling trucks is a powered tug for use with semi-live stillages. Both petrol and battery-powered models are available with towing capacities up to 3,000 lb. When the hydraulically-powered lift arm is raised it engages under the cup on the stillage and raises the feet off the ground, thus rendering the whole unit mobile. Maximum lifting capacity is 2,000 lb.

Both pedestrian controlled and ride-on

models are available. The new patent "Glide Control" feature is incorporated, which permits instant speed selection coupled with the smoothest possible starting, and enables even inexperienced operators to inch the truck smoothly. Control and steering are effected by means of a "deadman" tiller which is integral with the power unit and single drive wheel.

(PM/1082.)

FLAMEPROOF TRUCK

THIS battery electric truck can be used for all industrial purposes, but has been designed primarily for use in areas where explosive or inflammable materials are worked—places such as ammunition depots, oil refineries, airfields and so forth.

Not only is the truck flameproof, but a number of special safety features have also been added. These include an automatic overload circuit breaker and a

charging socket cut-out. The battery consists of 12 lead acid cells enclosed in an amply-ventilated steel box.

The truck has a payload of one ton and a turning radius of 6 ft. 3 in. The control gear and motor is totally enclosed.

(PM/1083.)

FOR TRICKY SURFACES

THE newly developed *Conveyancer T.C.6* is particularly designed for use over extremely rough uneven surfaces and, therefore, has a much increased

ground clearance. The truck is powered by a 6-cylinder diesel engine, which gives the machine a road speed in excess of 30 m.p.h. It has a wide drive axle, greatly increased size wheels and tyres and is equipped with a 4-wheel drive and 4-wheel steer arrangement. Transmission is by a torque converter. It can be supplied with a Skid-Stac attachment by which the unit load handling of regular shaped units is possible without the use of conventional pallets. The pallet in this system of handling is replaced by a thin sheet of fibre board.

(PM/1084.)

COLLAPSIBLE TROLLEY

COMPACT and collapsible this new trolley has applications for all industrial and commercial organisations. The folding feature, apart from convenience when not in use, or in restricted spaces, is the fact that it can either be carried

to the job or carried back when a job has been completed thus saving time by avoiding waiting for lifts, etc. The *Porto* is also suitable for the cartage of parcels to Post Offices, many of which object to a normal type of trolley.

(PM/1085.)

INDUSTRIAL TRACTOR

A TRULY remarkable performance is claimed for this new industrial tractor which combines the advantages of a track tractor and a wheeled vehicle.

The torque reaction, say the makers, actually helps wheel adhesion so that even in the worst ground conditions all four tyres grip equally.

Steering is simplicity itself calling for no more than finger-tip pressure, the

clutch being automatically engaged or disengaged according to the speed of the engine. The tractor has proved first-class for work in shunting yards and it can be fitted with a special shunting attachment.

Steering is by hand levers which operate contracting brake bands. Dimensions are as follows: height 3 ft. 4½ in., width 3 ft. 11 in., length 6 ft. 8½ in. The weight is approximately 12 cwt. **(PM/1086.)**

Heating & Lighting

FOR DINGY AREAS

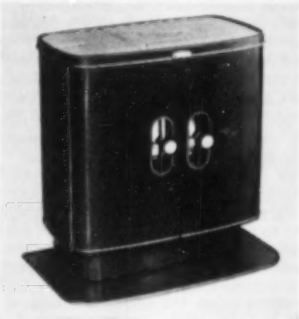
IN many branches of industry, dirty atmospheres can easily reduce the efficiency of a lighting installation by as much as 30—40 per cent and cleaning can be a very expensive item in the maintenance budget. Also, of course, there is the possibility of production losses while cleaning is carried out.

To help to overcome this problem one firm has developed a lamp, available at present in the 40kW. 4 ft. size only in cool white colour, which is interchangeable with standard lamps, but which has a built-in reflector to overcome the effect of external dirt collection.

Its external appearance is that of a standard fluorescent lamp. Two-thirds of the inner surface of the lamp are, however, coated with a special reflecting phosphorus in addition to the normal fluorescent material. The result, it is claimed, is an increased output in the required direction, which cannot be affected by external atmospheric conditions. **(PM/1087.)**

OIL CONVECTOR

INTENDED for continuous day and night burning for anything up to four months this new and attractive oil convector heater combines the advantages



of oil heating with the old-fashioned comfort of the flickering of flames. There is an electrical pre-heater, the object of which is to reduce the time taken between lighting and full output from approximately 20 to 5 minutes. It provides an even temperature which can be adjusted with a proportionate decrease in fuel consumption. The stove is designed to run on gas oil (diesel oil). **(PM/1088.)**

RADIANT HEATER

THE advantages of radiant heating have long been recognised, especially from the fuel saving aspect, although the capital cost of such equipment operating on steam or hot water for industrial applications has been relatively high.

Introduction of *Raystrip* provides radiant heating for industrial premises at no greater cost than would be involved for other forms of heating. From the first cost angle, economy in material, installation and erection cost is achieved by virtue of the fact that the equipment comprises a kit of parts which includes corrugated aluminium sheeting which is intimately bonded to the 1¼ in. piping which carries the steam or hot water.

The installation cost is low because the steam or hot water distributing main also actually acts as the heat dissipating medium on account of its contact with the corrugated aluminium sheet which forms the radiant surface.

Raystrip is installed at high level in the building and may be placed either horizontally or vertically. It is distributed throughout the building in long continuous runs, thus ensuring an even distribution of heat over all parts.

Since there is no air movement, this form of heating is particularly suitable for any buildings where dust is prevalent, such as in sawmills, flourmills, foundries, and food factories. In addition the absence of any moving parts ensures absolute quietness and a minimum of maintenance. This equipment is suitable

The skilled man you need . . .

Among the millions* of skilled workers who read the DAILY HERALD every day you will almost certainly find the replacement you are looking for. And naturally the easiest, most economical way of offering him the job is to advertise in the classified columns of the paper he reads—the "Herald."

Every classified advertisement appears in ALL copies, covering TOTAL circulation.

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Rate 20/- per line. Communications should be addressed to: Classified Advertisement Manager, DAILY HERALD, Acre House, Long Acre, London, W.C.2. Tel.: Temple Bar 1200 (Ext. 491, 492, 493 and 494).

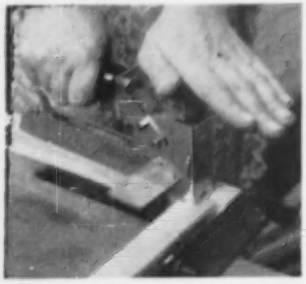
for connection to existing systems or for complete installation. **(PM/1089.)**

Efficiency Aids

ROBUST STAPLER

ADAPTABLE for any industrial stapling purpose the *Giant* stapler is also ideal for any normal duty stapling, and will staple thicknesses up to $\frac{7}{16}$ in. with ease and efficiency.

Taking several staple sizes it is robustly made throughout and cannot come out



of alignment. A special device is incorporated for the instant clearance of any obstruction. The illustration shown here shows the *Giant* adapted as a hand tacker to take $\frac{3}{16}$ in., $\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{7}{16}$ in. or $\frac{9}{16}$ in. hard steel staples. **(PM/1090.)**

EASY INSPECTING

THE makers of this profile projector claim that it takes the tedium out of examining small parts, screw forms and the like. The unit projects on to a screen magnified profiles of such objects, these being placed on a platform at a right angle to the optical axis of the projection lenses for the purpose. Aluminised surfaced mirrors throw the image on to the screen, while the platform itself may be adjusted in two ways: longitudinally or laterally by micrometer.

Maximum heights for work are $1\frac{3}{4}$ in.

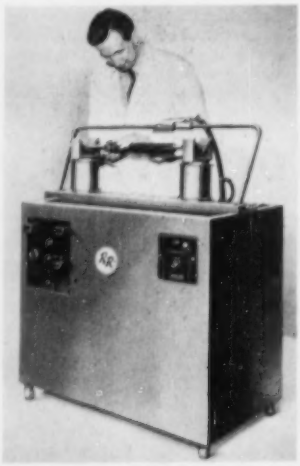
for x10 and $1\frac{1}{2}$ in. for x15 magnification. The screen consists of two sheets of glass with a sheet of plastic tracing between. This not only obviates any need to frost the screen, but also enables an enlarged drawing of the profile to be made on the tracing film, so that the projector can also be used as a comparator.

The projector is portable and robust enough to stand up to constant use on the work bench and thus helps rapid and accurate inspection by skilled and semi-skilled personnel. **(PM/1091.)**

MAGNETIC INSPECTION

ANOTHER valuable aid in the field of inspection is this new magnetic instrument which detects cracks and flaws in such parts as engine cylinders, crankshafts, spindles, etc. The detection is carried out by applying a magnetic field to the workpiece through the support coils, followed by a magnetic ink specially suited to the component under inspection. The magnetic field thus induced is intense in relation to the current consumption and quickly reveals any cracks or flaws.

An arrangement for removing the residual magnetism from the component after inspection also assists in the removal



of the iron particles normally present in the testing liquid and results in the quicker cleaning of the component.

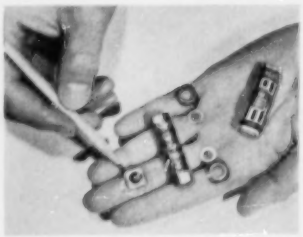
The coil supports may carry the component directly or through removable bearing blocks—blocks of different shapes can be used for different components. The testing fluid is sprayed on to the workpiece by a pump unit housed in the base of the unit. The spray and the support bar are adjustable to any position.

An attractive feature of the equipment is the very economical operating cost. Current consumption when connected to the mains is 3 amps. for magnetisation and 4 amps. for demagnetising.

(PM/1092.)

MIDGET BATTERY

A TINY new dry cell, smaller than a fingertip, a third more powerful than conventional flat cells, is made entirely by machine and is sealed in an airtight pliofilm envelope. Fifteen such

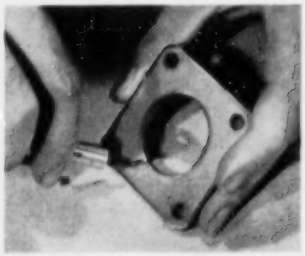


cells stacked in a column tightly wrapped with transparent plastic produces this $22\frac{1}{2}$ volt battery for pocket radios, hearing aids and other small electronic, test and laboratory devices. **(PM/1093.)**

NEW DEBURRER

A NEW American deburring tool, the *Burrqwik*, is now marketed in the United Kingdom. It offers a new method of deburring metal parts during fabrication without the need for a variety of tools such as are generally used.

The *Burrqwik* Set Model 500 consists of a handle with two interchangeable blades which are shaped to a hook-end. The blade when inserted in the handle is held inside by a circlip and is thereby free to swivel. The hook is engaged on the



metal edge, and by scraping the tool along the edge the burr is removed. The swivelling action of the blade is particularly advantageous on round sections as it does not require the operator to turn the hand whilst following the round edge, but allows this to be done automatically by the rotating swivel-action of the blade.

The handle is of anodised aluminium and the blades are made of superhardened high-speed tool steel, and the set is packed in a handy plastic container.

The *Burrqwik* tool can be used for all metals and plastics, on cut, punched, moulded and processed edges. The amount of burr removed is easily controlled by the extent of pressure exerted on the blade and this is particularly important on precision parts.

(PM/1094.)

Report From HOTELYMPIA

(*Continued from page 550*)

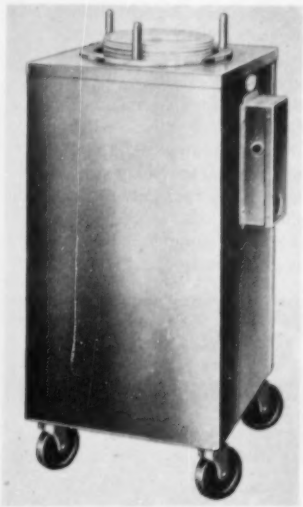
dirties of up to 150 meals per hour. It provides three separate washes, automatic rinse and drying of crockery in a circulating hot air stream. The high pressure wash eliminates the need for detergents and makes pre-washing of crockery unnecessary.

The machine can be cleaned in three minutes as all interior parts are easily accessible and easy to clean. Its simple operation and space-saving design allows this dishwasher to be accommodated in even the smallest kitchen as it needs only a little more space than a standard kitchen sink. (Ref. N.)

Another is the Swedish *Tornado* that has a variety of improvements which guarantee fast and hygienic results. The rack guides are fitted with roller bearings and racks glide in with a push of the finger. Three sliding doors facilitate cleaning and corner installations. Its capacity is 100 racks per hour, one rack holding 17 plates, 20 saucers, 16 teacups, 17 glasses or 150 pieces of cutlery. It has foot-operated wash and rinse control and is fully automatic. (Ref. O.)

Dishwashing from the angle which affects all no matter whether they use dishwashing machines or manual labour has also been given attention. New to HOTELYMPIA was the *Chinabrite* tablet which dissolves slowly in the dishwashing sink or tank, and ensures a constant concentration of detergent throughout changes of water. The tablet contains all the properties sufficient for creating clean and sterile crockery, softening the washing water and keeping the crockery free from stains. (Ref. P.)

Linking up with the higher standards of hygiene the *Vulcano* fumigator was shown which can be attached to an ordinary electric light fitting as a protection against all types of insects which permeate premises where food is handled. (Ref. Q.)



The **Lowerator**

An idea launched recently and which has infinite possibilities in industry generally is at the moment finding its greatest use in catering establishments. The *Lowerator* system offers space-saving storage, combined with automatic service level dispensing of china, glassware and trays. With the *Lowerator* there is no need for loose piles of plates on the counter. Available for installation in counters or, alternatively, as fully mobile units they can be heated to provide warm crockery. As the plates in the model shown here are removed the next one, driven by the tension of the spring, rises to the same convenient service level. Similar models were shown at the exhibition for trays, cups and glasses. (Ref. R.)

Furniture, crockery and many other inventions and refinements of interest to caterers were shown at this exhibition—far too many to mention—but if succeeding ones maintain the interest of HOTELYMPIA 1956, it should be recommended to all industrial caterers.

Return to the Cuisine?

THE National Catering Federation has announced that small catering establishments can now employ foreigners in the position of cooks, provided it is shown that a skilled cook is necessary. The foreigner must be at least 23 and have five years' cooking experience. Foreign labour permits will also be issued for all other skilled catering workers, including waitresses, provided, among other conditions, suitable British workers are not available and wages and conditions are not less than for British workers.

Canteen Boycott

NOTICES warning seven hundred miners at Denby Drury Lowe Colliery, Derby, to boycott the colliery canteen on their way home were posted at the pithead recently following a decision by a Ministry of Pensions and National Insurance Tribunal at Derby disallowing the claim of a miner who was injured in a fall after leaving the canteen outside working hours. He claimed that although he had left the canteen at the time of the accident he was still on the colliery premises. The tribunal refused to allow the claim.

A representative of the National Union of Mineworkers said: "This ruling affects every worker in England, and they should all know about it. It is ridiculous, and means that if an employee does not walk straight off the premises after finishing he will not be covered by insurance should there be an accident. On behalf of all the workers in England I am going to advise an appeal to a commissioner appointed by the Crown."

CANTEEN ADVICE BUREAU

For a number of years, we have been operating a trolley service in our works and offices, catering for some five hundred people, covering the lunch and tea breaks. Our existing method of distributing food is by the use of special metal trays lined with paper. Each item having been preordered, these trays are then distributed to various points in the works and offices, and a tea steward, appointed by the department, is responsible for seeing that the contents are allocated according to the original order.

Recently, however, we have received a certain amount of criticism from employees regarding difficulty in discriminating between types of food, e.g., cheese rolls and plain rolls, without the necessity of individual handling.

We would be extremely interested to hear how other companies, operating a similar scheme, overcome this particular problem, i.e., using distinguishing transparent bags or wrappers, etc. (*D. C. B., Hounslow.*)

THERE should really be no difficulty in distinguishing the filling, if any, of a roll which has been properly prepared. If the roll is slit down one side only it should be possible for the filling to be immediately visible to the eye, for since one side of the roll is closed the opposite side is forced a little way open by the filling. It is the recognition of this fact that makes for pleasing garnish and consequent eye appeal of filled rolls served in good class cafés.

Where the varieties of rolls served is not great it may be possible to get your baker to sell you different shapes of rolls so that you can work your own system of associating certain fillings with certain shapes of rolls.

We feel that though there is much to recommend the system of wrapping individual items you would undoubtedly find this a rather expensive business.

BOOKS RECEIVED

Health in Industry. *London Transport Executive. Butterworth's Medical Publications.* 35*s.*

Interviewing for the Selection of Staff. *E. Anstey and E. O. Mercer. Allen and Unwin.* 10*s.* 6*d.*

The Civil Service. *Frank Dunnill. Allen and Unwin.* 18*s.*

Co-Responsibility in Industry. *Jeremiah Newman. M. H. Gill and Son.* 13*s.* 6*d.*

Psychology of Personnel in Business and Industry. *Roger M. Bellows. Staples.* 42*s.*

Can You Claim ? *John Yaxley. Chatto and Windus.* 6*s.*

Should Foremen Have The Power To Sack?

(*Continued from page 536*)

quoted stand up to the two criteria of "being necessary" and "fair"? Do you agree with Mr. Grace that personal dislikes may cloud a man's judgment? Do you think that a foreman can be expected to judge issues fairly and dispassionately despite the fact that he is so close to them? For if he can do so the power to dismiss would then be safe in such hands, particularly if there is the safeguard of an appeal procedure.

One superintendent who still retains his authority to dismiss is in a dilemma. He says his charge hand, Mr. Smith, in control of a key plant, the mixing plant, will not take orders from Mr. Jones, the foreman. He says: "When told that Jones was his foreman and he was to take orders from him, he asked for his cards. We could not let him go because we did not have another man to replace him who had sufficient experience on this key plant. After an interview in the office he agreed to stay on for one month on condition that things were sorted out. In the office, Smith claimed that Jones had done his best to turn the rest of the men against him. Jones, however, did not have a bad word to say against Smith. My problem is, should I sack both men or only one, and which one. Is it possible to settle this without sacking either?"

What advice would you give? Do you keep "unsatisfactory" people because you cannot replace them? Mr. Grace feels that this is often the case. He says: "To-day, the blade of discipline has to be tempered with the availability of labour, *no employer can exert disciplinary measures to the point of dismissal if there is no one to replace the persons so dismissed.* Now that it is the turn of the employers to form a queue at the employment exchange, the employee can be as awkward and independent as he knows how; in the same way that the employer was, in many cases, the complete tyrant when the boot was on the other foot. For those in command it is very often a case of swallowing their pride and preserving whatever dignity is left to them."

The italics in the above quotation are mine. Can we have your comments on that sentence in particular, please?

DISCUSSION LEADER

Fatal Office Accident

A LOCAL Government clerical officer was filing papers in his office when the steel filing cabinet swayed and he was struck by one of the drawers and knocked to the ground. He sustained a broken femur and later died in hospital.

At the inquiry a surgeon at the hospital said that the man was X-rayed immediately on admission and was found to have a broken femur and cancer of the lung, which made him an unsuitable case for an operation. He would have died fairly soon because of the lung complaint, but it was impossible to say by how much the accident had shortened his life.

Evidence was given that after the accident the filing cabinet was found still several degrees out of the perpendicular, with the top drawer open and two lower drawers half-open. (**Rospa Bulletin.**)

Holidaying With Ease

MR. B. W. ROOME, General Welfare Officer, and his staff are offering, as a little side-line to their important activities, a holiday bureau willing to impart facts about facilities to travel—costs and attractions of holidays both at home and abroad. They have many brochures and many offers in hand. An organised tour for a party to Switzerland, or the French Riviera, or the Austrian Tyrol? Air travel? Or Cleethorpes? The Welfare Department may be able to help you. (**Thorncliffe News.**)

"Here's a service that saves me time and trouble on overalls"

"Yes, believe me, the Monogram Overall Service saves both money and worry. Takes a lot off my shoulders. No overalls to buy, Monogram supply them. Individual overalls, too. Monograms on the pockets if required and wearer's tag inside the collar. Laundering and replacements all looked after. Monogram call every week to deliver and collect. No fuss anywhere, in fact. Favourable comments from Board, visitors and wearers alike. You know what clean, good-looking overalls do for prestige and morale. Good people, Monogram: supply overalls to any style, design or colour—fully-shrunk and fast-dyed. All this for a very reasonable weekly service charge; in my case only 2/3 per employee for coat-overalls. Be a good idea for you to look into the Monogram service. . . ."

MONOGRAM OVERALL SERVICES

Write for further details to: Monogram Overall Services, Dept. 13, Stratton House, Piccadilly, London, W.1. Phone: MAYfair 8886

1955 Employment Rise

THE total in civil employment in Great Britain rose from mid-1954 to mid-1955 by 292,000 or 1.3 per cent. This compared with an increase of 366,000 in the year preceding. There were 153,000 more men (a 1 per cent increase) due mainly to the increase in the working population but also because the Forces took less men and fewer were unemployed. The number of women at work rose 139,000 or 1.8 per cent, most of the increase consisting of married women.

The distribution of extra manpower in 1955 showed most growth in manufacturing and within manufacturing in the metals, engineering and vehicles group; some increase in distribution; and less employment in agriculture, transport and communication, and public administration.

Prize For Safety

SIR HOWARD ROBERTS, president of the Royal Society for the Prevention of Accidents, received in London recently a trophy to be presented annually to the organisation or firm which makes the greatest contribution to the prevention of industrial accidents.

The award takes the form of a Georgian inkstand with a vellum book on which the winner's names will be recorded. It has been presented by Sir George Earle, chairman of the Associated Portland Cement Manufacturers, who hopes to stimulate employers and employees to further efforts for industrial safety.

How to Reduce Fuel Consumption

HINTS ON HEAT AND POWER UTILISATION is the title of a handout recently released by the National Industrial Fuel Efficiency Service. It suggests 18 ways in which a firm can reduce its consumption of heat and power without reducing its efficiency. These are:—

1. See that all process plant is loaded to capacity. A half-loaded plant requires almost as much heat as a fully loaded one.
2. Plan your production to reduce waiting time to a minimum. (Holding heat non-productively means more steam or coal used.)
3. Avoid sudden demands for steam. Valves opened suddenly cause unnecessary peak demands on boiler plant.
4. Stagger your steam demands, both between plant units and between departments. Fluctuating boiler loads reduce efficiency.
5. Don't open trap by-passes in a vain effort to get heat quickly.
6. In open boiling pans all steam that breaks the surface is wasted. Reduce steam supply during boiling period.
7. When concentrating solutions, every gallon of water evaporated requires at least a pound of coal in the boiler-house. Don't over-dilute at the start and don't concentrate more than necessary.
8. See that mechanical dryers (hydro extractors) are fully and effectively used. Extra water left in the material means extra steam required.
9. Make full use of stored hot water to reduce direct steam demand.
10. Idling machines use 70 per cent of the full power load. Stop machines when not required for production.
11. Close doors and windows to save heat.
12. When you switch off the fan of the unit heater, turn off the steam as well.
13. Keep the louvres of unit heaters clean. They attract a lot of dirt which impairs efficiency.
14. Make sure there is no tampering with the settings of thermostatic controls.
15. Keep all lamps and reflectors clean for maximum light.
16. Reduce the load on compressors by watching for leakage and unnecessary use.
17. Help the engineer by seeing that lagging is not damaged by leaning ladders against pipes or by soaking with water or oil.
18. And do tell the engineer of any faults you observe—on production, machinery or service lines. Prompt attention can often avoid a breakdown.

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Summary of Official Publications

READERS' GUIDE TO ACTS, STATUTORY ORDERS, NEW RULINGS AND AWARDS CONCERNING INDUSTRY AND PERSONNEL

STATUTORY INSTRUMENTS

No. 1861. The Lace Industry (Scientific Research Levy) Order, 1955. Dated December 9, 1955, made by the Board of Trade under section 9 of the Industrial Organisation and Development Act 1947 (c). *H.M.S.O.* 4d. Imposes levies on the lace industry for the financing of scientific research.

No. 1887. The Retail Bespoke Tailoring Wages Council (Scotland) Wages Regulation (Amendment) (No. 2) Order, 1955. Dated December 14, 1955, made by the Minister of Labour and National Service under section 10 of the Wages Councils Act, 1945 (a). *H.M.S.O.* 2d. Amends Retail Bespoke Tailoring Wages Council (Scotland) Wages Regulation Order, 1954 (Order R.B.S. (41) as amended by Order R.B.S. (43)), by re-defining the areas which determine the minimum remuneration applicable to workers under those Orders.

No. 1938. The Dressmaking and Women's Light Clothing Wages Council (England and Wales) Wages Regulation (Amendment) Order, 1955. Dated December 20, 1955, made by the Minister of Labour and National Service under section 10 of the Wages Councils Act, 1945 (a). *H.M.S.O.* 3d. Amends the Dressmaking and Women's Light Clothing Wages Council (England and Wales) Wages Regulation Order, 1953 (Order W.D. (59)) as amended by Order W.D. (61) by increasing the statutory minimum remuneration fixed by those Orders.

No. 1969. The Hat, Cap and Millinery Wages Council (England and Wales) Wages Regulation (Amendment) Order, 1955. Dated December 22, 1955, made by the Minister of Labour and National Service under section 10 of the Wages Councils Act, 1945 (a). *H.M.S.O.* 3d. Amends the Hat, Cap and Millinery Wages Council (England and Wales) Wages Regulation Order, 1953 (Order H.M. (44)) as amended by Order H.M. (46) by increasing the statutory minimum remuneration fixed by those Orders.

No. 35. The Dressmaking and Women's Light Clothing Wages Council (Scotland) Wages Regulation (Amendment) Order, 1956. Dated January 12, 1956, made by the Minister of Labour and National Service under Section 10 of the Wages Councils Act, 1945 (a). *H.M.S.O.* 3d. Amends Dressmaking and Women's Light Clothing Wages Council (Scotland) Regulation Order, 1955 (Order W.D.S. (63)), by increasing the statutory minimum remuneration fixed by that Order. Effective from 27/1/56.

No. 36. The Hat, Cap and Millinery Wages Council (Scotland) Wages Regulation (Amendment) Order, 1956. Dated January 12, 1956, made by the Minister of Labour and National Service under Section 10 of the Wages Councils Act, 1945 (a). *H.M.S.O.* 4d. Amends the Hat, Cap and Millinery Wages Council (Scotland) Wages Regulation Order, 1955 (Order H.M.S. (43)), by increasing the statutory minimum remuneration fixed by that Order. Effective from 27/1/56.

No. 109. The Cutlery Wages Council (Great Britain) Wages Regulation Order, 1956. Dated January 30, 1956, made by the Minister of Labour and National Service under Section 10 of the Wages Councils Act, 1945 (a). *H.M.S.O.* 6d. Sets out statutory minimum remuneration payable in substitution for that fixed by Cutlery Wages Council (Great Britain) Wages Regulation (No. 2) Order, 1954, and increases maximum amount of holiday remuneration and accrued holiday remuneration payable to a worker, other than an outworker. Order C.T. (57) is revoked.

No. 118. The National Insurance (Industrial Injuries) (Prescribed Diseases) Amendment Regulations, 1956. Dated February 1, 1956, made by the Minister of Pensions and National Insurance under Sections 55, 56, 57 and 86 of the National Insurance (Industrial Injuries) Act, 1946 (a). *H.M.S.O.* 3d. Extends insurance under the National Insurance (Industrial Injuries) Act, 1946, to cadmium poisoning and extends insurance against byssinosis by reducing the period of qualifying employment in any prescribed occupation from twenty to ten years and by removing the qualification that the extent of disablement resulting from the relevant loss of faculty must be not less than 50 per cent.

INDUSTRIAL DISPUTES TRIBUNAL AWARDS

No. 776. Remuneration of the Deputy County Planning Officer of the Wiltshire County Council. Claim: For the implementation of Recommendations of the Joint Negotiating Committee for Chief Officers of Local Authorities of May 27, 1952. **Award:** Claim established. Salary scale appropriate to the post of Deputy County Planning Officer in Wiltshire shall be Scale C, effective from April 5, 1955. (24/11/55.)

No. 777. Remuneration of Certain Workers Employed by an Engineering Company at Carnoistie. Claim: That certain machinemen should have been paid the increase of 8s. 6d. per week provided under the agreement of April 13, 1954, in the engineering industry. **Award:** Claim not established. (28/11/55.)

No. 778. Observance by the Cardiff Corporation of Recognised Terms and Conditions of Employment in Respect of the Town Clerk. Claim: That the Corporation should observe in respect of their Town Clerk the Recommendations of the Joint Negotiating Committee for Town Clerks and District Council Clerks. **Award:** Claim established. Terms and conditions of employment applicable are laid down by the Memorandum of Recommendations issued on September 8, 1949, effective from July 12, 1950. (29/11/55.)

No. 779. Remuneration of Certain Workers Employed by an Engineering Company at Motherwell. Claim: That workers employed as unloaders should have been paid the increase of 7s. 6d. per week provided under the agreement of April 13, 1954, in the engineering industry. **Award:** Claim established with effect from September 29, 1954. (30/11/55.)

No. 780. Observance of Recognised Terms and Conditions of Employment by a Firm of Engineers and Ironfounders at Gloucester. Claim: That the Company should observe the recognised terms and conditions of employment in the engineering industry and in particular the agreement of November 29, 1951, relating to holidays with pay. **Award:** Claim established. Terms and conditions of employment applicable to the case are those governing holiday credits for manual workers employed in the engineering industry as set out in the agreement of April 3, 1946, as amended on November 29, 1951. (2/12/55.)

No. 781. Observance of Recognised Terms and Conditions of Employment in Respect of their Journalists by the Proprietors of a Weekly Newspaper in Norfolk. Claim: That the employers should have observed certain specified terms and conditions in respect of certain of their journalists. **Award:** Claim established with effect from January 4, 1955. (6/12/55.)

No. 782. Remuneration of the Treasurer and Engineer and Surveyor of the Houghton-Le-Spring Urban District Council. Claim: That the Urban District Council should observe the revised scales of salary promulgated by the Joint Negotiating Committee for Chief Officers of Local Authorities on November 30, 1954. **Award:** Claim established with effect from January 17, 1955. (7/12/55.)

No. 783. Holiday Payments and Remuneration of Certain Female Workers Employed by an Engineering Firm at Hereford. Claim: For the implementation of specified agreements in the engineering industry. **Award:** Claim established. Effective from 14/7/56. (13/12/55).

No. 784. Remuneration of Two Apprentices Employed by a Builder at Ampleforth, York. Claim: That two apprentices in respect of a given period should be paid the appropriate rates agreed for such workers in the building industry. **Award:** Claim established. (16/12/55.)

No. 785. Provision of Free Living Accommodation in Respect of a Worker Formerly Employed as a Chauffeur/Bearer by the Royal Arsenal Co-operative Society Ltd. Claim: That a named worker formerly employed as a chauffeur/bearer should have been provided with free living accommodation. **Award:** Claim not established. (21/12/55.)

No. 786. Rates of Wages in the Electrical Contracting Industry. Claim: For a further increase of 1d. per hour in the journeyman electricians' rate over and above the increase of 3d. per hour which came into effect on 14/3/55. **Award:** Claim not established. (23/12/55.)

No. 787. Claim for Payment of Wages in Lieu of Notice to a Worker Formerly Employed by an Engineering Firm in London. Claim: That the worker named in the reference should be paid forty-four hours wages in lieu of notice in accordance with a specified agreement. **Award:** Claim established. (29/12/55.)

No. 788. Remuneration of Certain Officers Employed by the Metropolitan Water Board. Claim: For an increase in remuneration. **Award:** Existing salaries of officers herein concerned shall be increased by 12½ per cent on the first £790 of salary and by 10 per cent on the amount of salary in excess of £790. Effective from 1/5/55 for supervisory grades and from 1/7/55 for main grades. (4/1/56.)

No. 789. Grading of a Certain Class of Manual Worker Employed by Local Authorities in the London District. Claim: For the upgrading of tree pruners or loppers. **Award:** Claim established. Effective immediately. (4/1/56.)

No. 790. Rates of Wages of Adult Male Workers Employed by a Firm of Waste Paper Merchants at Walworth, London. Claim: For increased rates of pay. **Award:** Basic weekly rates of pay of adult male workers concerned shall be increased

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No. 791. Remuneration of the Chief Quantity Surveyor of the Middlesex County Council. Claim: That the salary scale of the Chief Quantity Surveyor should have been fixed at £1,750 × £50 to £2,000 with effect from 1/4/52 and at £1,937 10s. × £52 10s. to £2,200 with effect from 1/1/55. **Award**: Claim established. Salary scale appropriate to this post should be Scale H. (9/1/56.)

No. 792. Claim for Payment of Accrued Holiday Pay to a Worker Formerly Employed by a Firm of Electrical Contractors at Enfield. Claim: For payment of accrued holiday credits in accordance with the terms of a specified agreement in the electrical contracting industry. **Award**: Claim established. (9/1/56.)

INDUSTRIAL COURT AWARDS

No. 2586. Iron and Steel Trades. Messrs. Steel, Peech & Tozer and the Park Gate Iron and Steel Company Ltd. Craftsmen's Mates—Claim for increase in bonus. **Reference**: That there should be granted a substantial increase in the stabilised bonus paid to craftsmen's mates employed in the above firm. **Award**: That the stabilised bonus paid to craftsmen's mates in the above firm be increased from 2.36d. gross per hour worked to 3d. gross per hour worked. Effective from first Sunday in May, 1955. (4/11/55.)

No. 2587. Electricity Supply Industry. Reference: To determine a claim by the Trade Union's Side of the N.J.I.C. for the electricity supply industry, that the auxiliary plant attendants employed in the "A" and "B" Pump Houses at the Barking Power Station and the Brimsdown Generating Station shall receive an additional 1½d. per hour for added responsibility, and the auxiliary plant attendants at the Ironbridge Generating Station shall receive a plus payment of 1d. per hour for additional responsibility. **Award**: Claim established for all but the Auxiliary Plant Attendants at the Ironbridge Generating Station. (17/11/55.)

No. 2588. Building Industry. Matters arising out of Industrial Court Award No. 2574. Award: That from the first full pay period following 12/7/55, the remuneration of Grade I and Grade II General Foremen in the employment of the Housing and Works Department of the Corporation of Glasgow shall be increased by the sum of 20s. per week while engaged on contracts where incentive schemes apply to the main body of workers. (17/11/55.)

No. 2589. Packing Case Industry. British Aluminium Company Ltd.—Employees at the Falkirk Establishment—Claim for Increase in Wages. Reference: That the British Aluminium Co. Ltd. should pay to members of the National Union of Packing Case Makers (Wood and Tin), Box Makers, Sawyers and Mill Workers employed in their Falkirk establishment the 3d. per hour increase in wages paid to Packing Case Makers by the Scottish National Federation of Packing Case Manufacturers in May, 1955. **Award**: Claim established. (14/12/55.)

No. 2590. Local Government. Justices' Clerks' Assistants—Scales of Salary—Claim for Increase. Reference: To determine a difference between the two sides of the Joint Negotiating Committee for Justices' Clerks' Assistants as to what recommendation should be made to the employing authorities and to the Council of each County and Borough having a separate Commission of the Peace as to the scales of salary for whole time Justices' Clerks' Assistants with the exception of those employed within the Administrative County of London. **Award**: Claim established. Division of grades and salary scales defined. Effective from April 1, 1953. (14/12/55.)

No. 2591. Merchant Shipping. Marconi International Marine Communication Co. Ltd., Radio Communication Co. Ltd., Marconi Sounding Device Co. Ltd.—Memoranda of Agreement in Respect of Inspectors, Assistant Inspectors, Marine Technical Assistants and Temporary Marine Technical Assistants—Claim for amendment of certain Clauses. Reference: To determine a difference between the Radio Officers' Union and the aforesaid companies arising out of the proposals by the Union to amend the following Clauses of the subsisting Memoranda of Agreement in respect of the aforesaid positions, both dated 29/5/52. **Award**: That the first two stages of the Marine Technical Assistant shall be eliminated and certain salary scales be increased. (12/1/56.)

No. 2592. Local Government Service. County Council of the West Riding of Yorkshire—Deputy Clerk—Salary Scale—Claim for Increase. Reference: To determine the salary to be paid to Mr. S. J. McVicar, Deputy Clerk of the West Riding County Council. **Award**: The appellant should receive £3,000 per annum from 1/1/56. (18/1/56.)

CIVIL SERVICE ARBITRATION TRIBUNAL AWARDS

No. 301. Civilian Radio Operators Employed in the Composite Signals Organisation. Claim: That the salary scale (London, male) of Radio Operators in the Composite Signals Organisation be increased. **Award**: Claim established. Effective from 1/4/55. (28/11/55.)

No. 302. Chief Air Traffic Control Officer, Senior Air Traffic Control Officers and Air Traffic Control Officers Grades I, II and III employed by the Ministry of Transport and Civil Aviation. Reference: Salary scales and claim for increase with retrospective effect. **Award**: Pay of Air Traffic Control Officers, Grades I, II and III should be increased by £30 at each point in the salary scale. Claim not established for the other ranks. (3/12/55.)

No. 303. Scale Payment Sub-Postmasters and Sub-Postmistresses. Reference: Minimum payments. Claim for increase with retrospective effect. **Award**: Minimum salary scale increased. Effective from 1/7/55. (8/12/55.)

No. 304. Assistant Engineers and Inspectors Employed by the Post Office. Reference: That the consolidated London salary scales of Assistant Engineers and Inspectors employed by the Post Office be increased. **Award**: Claim established, with effect from 1/1/55. (14/12/55.)

No. 305. Grade III of the Linked Departmental Classes of Instructional Officers. Claim: Salary Scale—Claim for increase with retrospective effect. **Award**: Claim established. Effective from 1/7/54. (29/12/55.)

No. 306. Superintending Electrical Engineers, Electrical Engineers and Assistant Electrical Engineers Employed by the Director of Electrical

(*Continued overleaf*)

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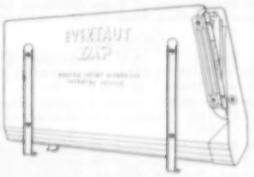

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Official Publications

(*Continued from page 561*)

Engineering and the Director of Dockyards, Admiralty. Claim: Salary scales. Claim for increase with retrospective effect. **Award**: That the salary scale be increased for all of the above ranks excepting that of Superintending Electrical Engineers with effect from 1/1/51. (11/1/56.)

GENERAL

Mines. Report of H.M. Principal Electrical Inspector of Mines for 1954. Published by Ministry of Fuel and Power. *H.M.S.O.* 2s.

Circular No. 19/55. Food Hygiene Regulations 1955. 21/12/55. Published by Ministry of Health. *H.M.S.O.* 4d.

Building Research Station Digest No. 84. January, 1956. Fire Resistance of Prestressed Concrete, Chlorinated Rubber Paints, Colliery Shale as Hardcore or Filling, Corrosion and Damage to Lead in Valley Gutters. Published by Department of Scientific and Industrial Research. *H.M.S.O.* 3d.

Regulations for Factories in which Self-Acting Mules are Used. Factory Form 941. *H.M.S.O.* 3d.

Workmen's Compensation (Supplementation). House of Commons Bill to provide for the payment of allowances out of the Industrial Injuries Fund to workmen to whom the Workmen's Compensation Acts apply; and for purposes connected therewith. 9/11/55. *H.M.S.O.* 4d.

Cadmium Poisoning. Report of the Industrial Injuries Advisory Council on the question whether cadmium poisoning should be prescribed under the National Insurance (Industrial Injuries) Act, 1946. Cmd. Paper 9674, January, 1956. *H.M.S.O.* 6d.

Byssinosis. Report of the Industrial Injuries Advisory Council on the provision made for byssinosis under the National Insurance (Industrial Injuries) Act, 1946. Cmd. Paper 9673, January, 1956. *H.M.S.O.* 9d.

Superannuation Scheme for those engaged in the National Health Service in England and Wales: An Explanation. Reprinted for the Ministry of Health. *H.M.S.O.* 1s.

APPOINTMENTS

THE North Thames Gas Board have appointed **MR. H. W. MOYS** to be Staff Controller in succession to **MR. R. N. BRUCE** and with effect from May 1, 1956. Mr. Moys, who is 48, was educated at Mercer's School and King's College, London, where he took an engineering degree. Since the war, Mr. Moys has been a member and chairman of the Board of Examiners for the Institution of Gas Engineers.

The Rt. Hon. Iain Macleod, M.P., Minister of Labour and National Service, has appointed **MR. I. S. DEWAR** to be his Assistant Private Secretary in succession to **MR. G. A. BRAND** and **DR. REGINALD BENNETT, M.P.**, to be his Parliamentary Private Secretary.

F. L. CREBER has been appointed Supervisor, Safety Instruction and Committee Activities at *Vauxhall Motors Ltd.* Here, too, **M. W. FIELD** has been appointed Supervisor, Safety Development—Mechanical.

MR. R. EVANS, previously North-West Area Representative for many years with *Messrs. Northide Ltd.*, has been appointed Midlands Area Manager. He will operate from the new Birmingham branch at 80, Pershore Street, Birmingham 5.

MR. R. S. GOODHIND has been appointed Personnel Officer of *Newton Chambers & Company Ltd.*, Sheffield, in succession to Mr. M. L. Clement-Jones.

PEOPLE AT WORK

(*Continued from page 548*)

Our Most Valuable Raw Material

"THIS country's greatest shortage is the shortage of technically trained and skilled manpower. No system can be better than the people who make it. Our industrial future depends completely on the quality and quantity of our trained people." This warning was issued by Mr. C. L. Old, Principal of the Wolverhampton and Staffordshire Technical College, in a paper presented to the British Institute of Management's Conference at Southport, April 13 to 14.

Speaking under the Conference's general theme, "Management Looks Ahead", Mr. Old put forward the opinion that it is perhaps unwise to think of training people specifically for automation since it is very unlikely that automation will ever be applied to more than a portion of industry. The basic industries such as mining, metal extraction and agriculture still need much more mechanization and electrification. Transport and distribution will have to expand. Vastly greater power will be needed from generating stations. All these are going to call for more and more technically trained manpower at all levels of skill and knowledge.

"Our only hope", said Mr. Old, "is to regard our people as our most valuable raw material. In other words to train every man—and indeed every woman—to his or her highest potential.

"Sir David Eccles, Minister of Education, recently said that he would like to see 50 per cent of boys and 50 per cent of girls leaving school passing on to further education. The present figures are 27 per cent and 7 per cent. Compare this with Germany where they already have 100 per cent of both boys and girls in attendance up to the age of 18. Unless we are prepared to admit that our people are of lower intelligence than their German counterparts we have a long way to go before we are using all the talents we as a people possess.

"In France, Germany and Russia systems of training are more regimented or compartmentalised. It is as if the schools were a conveyor belt throwing off boys at specific stations representing entry to a particular level of unskilled, semi-skilled or skilled work, technician or technologist. Our system is much more flexible and allows a late starter to progress to any position to which his natural abilities will take him. Nevertheless at higher levels of training in Germany and Russia technicians are trained on a full-time basis. Only Great Britain is content to train such people—and even higher grades—by systems of part-time study.

"The technical preparation for automatic factories", said Mr. Old, "cannot be considered in isolation but only as part of a developing industrial scene. In plain language this means more and better technically trained manpower at all levels and the continuing exploitation of ideas and know-how. More and better technical education implies a better grounding lower down in the educational system. So far as education is concerned we are still getting it on the cheap. Only 2 per cent of our national income goes into it. It may be that automatic factories will produce goods in large quantities cheaply but this is not the way to treat our most valuable raw material."

Recovering Morale

SPEAKERS at a recent meeting of the National Association for Mental Health discussed the question of why people lacked responsibility in different walks of life. Mr. John Halpin, a company managing director, confined his attention to the people involved in industry. Short of the higher echelons, he found them an irresponsible lot. The operative, because he had no stake in it himself, lacked responsibility to the organisation which employed him; the foreman was undecided where his responsibilities lay; and beyond putting up the money, as far as the industrial undertaking was concerned, the shareholder had no responsibility at all.

At present, the law recognised only the shareholder. To remedy this state of affairs, Mr. Halpin would like to see the whole basis of company law altered so that in industry operatives and managers also could be given legal recognition, possibly by non-voting shares. By sharing some of the profits everyone in the organisation would have an interest in it. He believed that if we could remove even 5 per cent of the stress and anxiety that unnecessarily surrounds industrial life productivity would be increased by a "staggering amount".

Time Off To Boost Output

AN original and interesting experiment is being staged by *Dexion Ltd.*, the slotted angle iron manufacturers, from May 2 to 4 at their London factory. It is no less than a production conference for their factory staff which will be attended by some 110 factory staff and 20 people from the firm's head office. During the three days of the conference the men and women who make the product will be told what the rest of the company is doing and what its customers think, and will discuss how to increase productivity still more.

The factory itself will be closed for three days while the conference is going on, but the firm emphasises that this loss of production has already been made good through the efforts of those who will be attending. The reason for holding the conference is to maintain the already good system of communication existing within the firm.

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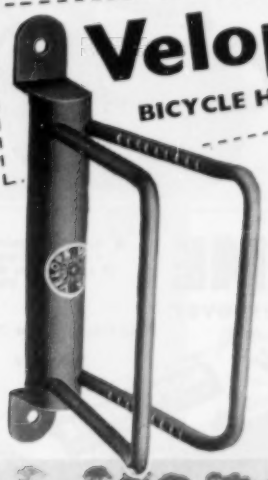

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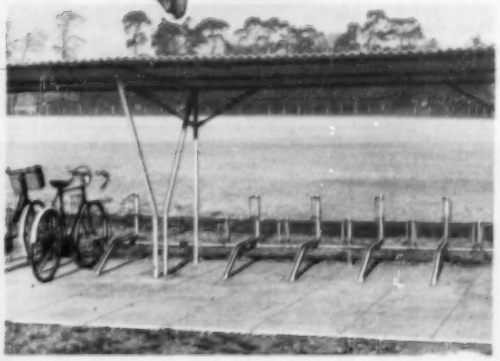

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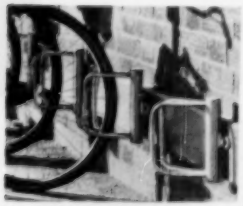

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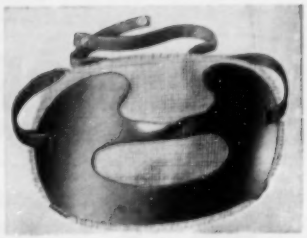

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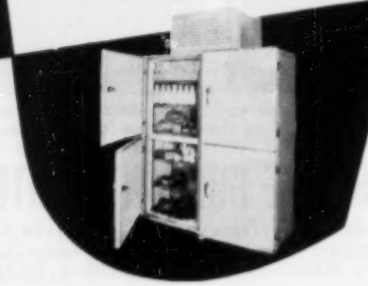

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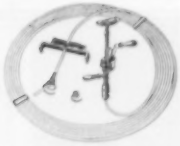

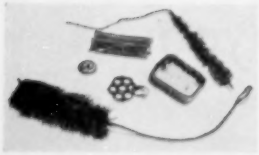

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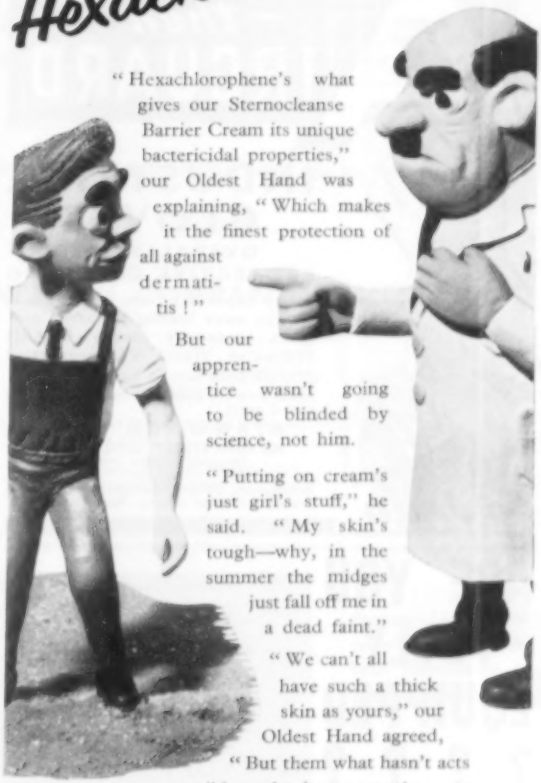

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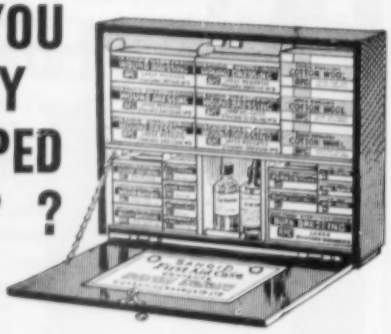

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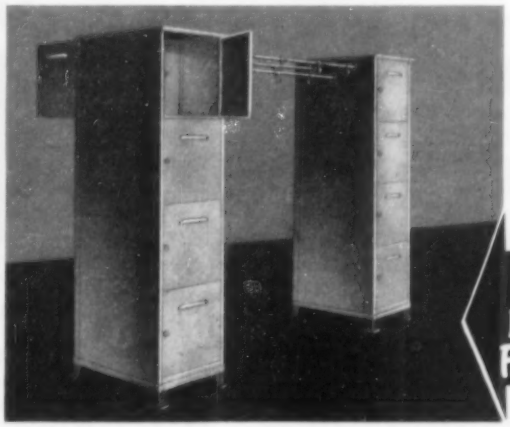

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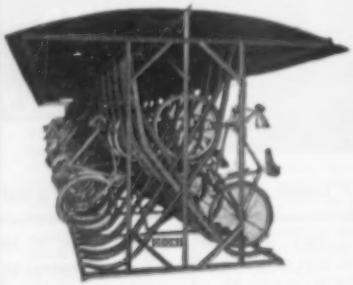

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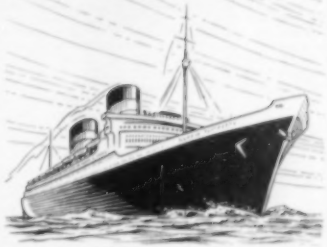

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